FEM 1.209: 290492/986

JUN 1 8 1986

ORIGINAL

FLOOD INSURANCE STUDY

COMPLETED

COUNTY OF JACKSON, MISSOURI

UNINCORPORATED AREAS

REVISED:

SEPTEMBER 4, 1986

Federal Emergency Management Agency

COMMUNITY NUMBER - 290492

BEST COPY AVAILABLE

NOTICE TO
FLOOD INSURANCE STUDY USERS

Individual components of this Flood Insurance Study (i.e., text, tables, profiles, and maps) are all subject to revision as additional data become available. Because revised components may be issued separately, study users should consult the community map repository for those components that are currently effective.

In cases where this Flood Insurance Study and any components thereof warrant revision, a Revisions Description section may be incorporated into this text. When applicable, study users should refer to the Revisions Description to obtain pertinent data and information concerning revisions.

BEST COPY AVAILABLE

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
1.1	Purpose of Study	1
1.2	Authority and Acknowledgements	1
1.3	Coordination	1
2.0	AREA STUDIED	2
2.1	Scope of Study	2
2.2	Community Description	2
2.3	Principal Flood Problems	7
2.4	Flood Protection Measures	8
3.0	ENGINEERING METHODS	8
3.1	Hydrologic Analyses	8
3.2	Hydraulic Analyses	9
4.0	FLOOD PLAIN MANAGEMENT APPLICATIONS	15
4.1	Flood Boundaries	16
4.2	Floodways	16
5.0	INSURANCE APPLICATION	17
5.1	Reach Determinations	36
5.2	Flood Hazard Factors	36
5.3	Flood Insurance Zones	36
5.4	Flood Insurance Rate Map Description	37

BEST COPY AVAILABLE

TABLE OF CONTENTS (Continued)

		Page
6.0	OTHER STUDIES	37
7.0	LOCATION OF DATA	43
8.0	REFERENCES AND BIBLIOGRAPHY	43
9.0	REVISIONS DESCRIPTION (Revised: September 4, 1986)	46
9.1	Purpose	46
9.2	Acknowledgments	46
9.3	Scope	46
9.4	Location of Data	46
9.5	References and Bibliography	46

FIGURES

Figure 1 -	Vicinity Map	3
Figure 2 -	Floodway Schematic	17

TABLES

Table 1 -	Flooding Sources Table	4
Table 2 -	Summary of Discharges	10
Table 3 -	Floodway Data	18
Table 4 -	Flood Insurance Zone Data	38

EXHIBITS

Flood Profiles

Missouri River	Panels	01P-02P
Horseshoe Creek	Panels	03P-05P
Horseshoe Creek Tributary	Panel	06P
Sni-A-Bar Creek	Panels	07P-12P
West Fork Sni-A-Bar Creek	Panels	13P-17P
Fire Prairie Creek	Panels	18P-19P
West Fire Prairie Creek	Panels	20P-21P
Seminary Creek	Panels	22P-23P
Mill Creek	Panel	24P
West Branch Crawford Creek	Panels	25P-26P
Tributary No. B-1	Panels	27P-28P
Tributary No. B-2	Panels	29P-30P
Tributary No. C-1	Panel	31P

BEST COPY AVAILABLE

TABLE OF CONTENTS (Continued)

EXHIBITS

Flood Profiles (continued)

Tributary No. C-2	Panel	32P
Tributary No. S-1	Panels	33P-34P
Tributary No. S-2	Panels	35P-36P
Tributary No. S-3	Panels	37P-38P
Tributary No. S-3A	Panels	39P-40P
Tributary No. S-4	Panels	41P-43P
Tributary No. S-5	Panels	44P-46P
Tucker Branch	Panels	47P-51P
Tucker Branch Tributary	Panel	52P
Blue Branch	Panels	53P-57P
Swiney Branch	Panels	58P-61P
Swiney Branch Tributary	Panels	62P-63P

Flood Boundary and Floodway Map Index
Flood Boundary and Floodway Map

PUBLISHED SEPARATELY:

Flood Insurance Rate Map Index
Flood Insurance Rate Map

BEST COPY AVAILABLE

FLOOD INSURANCE STUDY

COUNTY OF JACKSON, MISSOURI
UNINCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

The purpose of this Type 19 Flood Insurance Study is to investigate the existence and severity of flood hazards in the Unincorporated Areas of the County of Jackson, Missouri and to aid the administration of the Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. Initial use of this information will be to revise Flood Insurance Rate Maps developed from data presented in the Type 15 Flood Insurance Study. Further use of the information will be made by local and regional planners in their efforts to promote sound land use and flood plain management.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than those on which these Federally-supported studies are based. These criteria take precedence over the minimum Federal criteria for purposes of regulating development in the flood plain, as set forth in the Code of Federal Regulations at 44 CFR 60.3 (d). In such cases, however, it shall be understood that the state (or other jurisdictional agency) shall be able to explain these requirements and criteria.

1.2 Authority and Acknowledgements

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by the U.S. Army Corps of Engineers (COE), Kansas City District, for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement Nos. H-7-76 and H-9-79, Project Order Nos. 13 and 4. These studies were completed in May 1977 and June 1981.

1.3 Coordination

Basic data research was coordinated with Jackson County officials. Residents of the area were contacted and supplied basic flood information for the Type 15 Study. Meetings were held with county officials in May 1976, for data collection, and May 1977, to discuss floodway criteria.

An October 27, 1977, the results of the Type 15 work by the Study Contractor were reviewed and accepted at a final coordination meeting attended by representatives of the Study Contractor, FEMA, and the community.

BEST COPY AVAILABLE

For the Type 19 Study, meetings with Jackson County officials were held in December 1978, for data collection, and in July 1981, to discuss data floodway criteria.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the unincorporated areas of the County of Jackson, Missouri. The incorporated area within the county was excluded from this study. The area of study is shown on the Vicinity Map (Figure 1).

The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development or proposed construction for the next five years, through June 1986.

In the Type 15 Flood Insurance Study, the Missouri River, the Little Blue River, Mill Creek, and Fire Prairie Creek were studied by detailed methods. In this, the Type 19 Flood Insurance Study, the following streams were added to the detailed study list: Seminary Creek, Tucker Branch, Tucker Branch Tributary, Horseshoe Creek, Horseshoe Creek Tributary, Swiney Branch, Swiney Branch Tributary, West Fire Prairie Creek, Blue Branch, Wilson Creek, East Branch Wilson Creek, West Branch Crawford Creek, Sni-A-Bar Creek, West Fork Sni-A-Bar Creek, and Tributaries B-1, B-2, C-1, C-2, S-1, S-2, S-3, S-3A, S-4, and S-5.

Approximate methods of analysis were used to study those areas having a low development potential or minimal flood hazards as identified at the initiation of the study. The scope and methods of study were proposed to and agreed upon by FEMA and the County of Jackson.

The study streams are listed in the Flooding Sources Table (Table 1).

2.2 Community Description

Jackson County, Missouri, is one of seven counties which comprise the Kansas City Metropolitan Area. The unincorporated portion is limited to the eastern half of the county and includes the area east of the corporate limits of Sugar Creek, Independence, Lee's Summit, and Greenwood. Counties surrounding Jackson County include Clay and Ray Counties to the north, Lafayette and Johnson Counties to the east, Cass County to the south, and Johnson and Wyandotte Counties (in Kansas) to the west. The 1980 Census reported that the rural areas of Jackson County had a population of 22,738 (Reference 1). This growth, which is expected to continue, is the result of persons seeking less crowded environments. The development of modern highways has made the outlying areas of the metropolitan area increasingly accessible.

The Jackson County area has a modified continental climate. Moist air currents from the Gulf of Mexico, dry air currents from the semiarid Southwest, and cold polar continental currents all affect the weather in the area. The wide range of potential influences produce weather that is variable and subject to rapid change, particularly during the spring season (Reference 2).

BEST COPY AVAILABLE

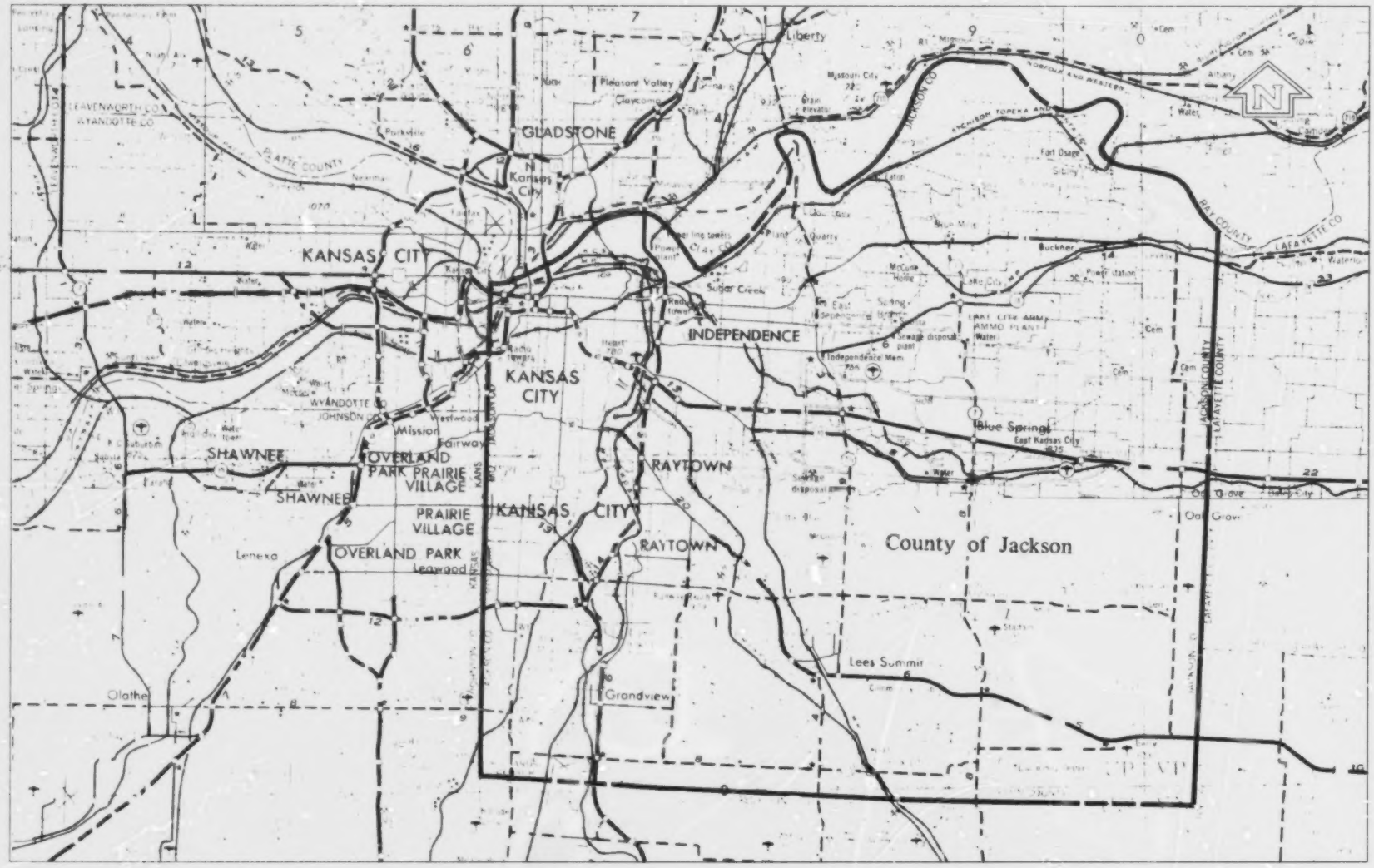


FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

APPROXIMATE SCALE

5 0 5 10 15 MILES

VICINITY MAP

BEST COPY AVAILABLE

TABLE 1: FLOODING SOURCES

FLOODING SOURCE	DESCRIPTION OF STUDY LIMITS	
	FROM	TO
DETAILED FLOODING SOURCES		
BLUE BRANCH	Confluence with Sni-A-Bar Creek	Ryan Road
TRIBUTARY NO. B-1	Confluence with Blue Branch	City of Blue Springs corporate limits
TRIBUTARY NO. B-2	Confluence of Tributary No. B-1	City of Blue Springs corporate limits
WEST BRANCH CRAWFORD CREEK	2,200 feet downstream of Stringtown Road	2,012 feet upstream of R.F. Gammon Road
TRIBUTARY NO. C-1	Confluence with Tributary No. C-2	U.S. Highway 50
TRIBUTARY NO. C-2	Confluence with West Branch Crawford Creek	3,600 feet downstream of U.S. Highway 50
FIRE PRAIRIE CREEK	U.S. Highway 24	City of Independence corporate limit
HORSESHOE CREEK TRIBUTARY	City of Oak Grove upstream corporate limit	City of Oak Grove downstream of corporate limits
HORSESHOE CREEK	Confluence with Sni-A-Bar Creek	County Boundary

BEST COPY AVAILABLE

TABLE 1: FLOODING SOURCES (Continued)

FLOODING SOURCE	DESCRIPTION OF STUDY LIMITS	
	FROM	TO
DETAILED FLOODING SOURCES		
MILL CREEK	City of Sugar Creek corporate limits	City of Independence corporate limits
MISSOURI RIVER	City of Levasy corporate limits	River Mile 353
SNI-A-BAR CREEK	County Boundary	Falkenberry Road near Village of Lone Jack corporate limits
WEST FORK SNI-A-BAR CREEK	Confluence with Sni-A-Bar Creek	City of Lake Lotawana corporate limits
TRIBUTARY NO. S-1	County Highway H	700 feet downstream of Interstate Highway 70
TRIBUTARY NO. S-2	Confluence with Sni-A-Bar Creek	200 feet downstream of Interstate Highway 70
TRIBUTARY NO. S-3	Confluence with Sni-A-Bar Creek	2,260 feet upstream of Interstate Highway 70
TRIBUTARY NO. S-3A	Confluence with Tributary No. S-3	600 feet downstream of Interstate Highway 70
TRIBUTARY NO. S-4	Confluence with Sni-A-Bar Creek	1,280 feet upstream of Pink Hill Road

BEST COPY AVAILABLE

BLANK PAGE

BLANK PAGE

BLANK PAGE

TABLE 1: FLOODING SOURCES (Continued)

FLOODING SOURCE	DESCRIPTION OF STUDY LIMITS	
	FROM	TO
DETAILED FLOODING SOURCES		
TRIBUTARY NO. S-5	Confluence with Sni-A-Bar Creek	Buckner-Tarsney Road
SEMINARY CREEK	Confluence with Sni-A-Bar Creek	Section line 5-8, R29W, T49N
SWINEY BRANCH	Confluence with Sni-A-Bar Creek	About 0.56 mile upstream of Tyer Road
SWINEY BRANCH TRIBUTARY	Confluence with Swiney Creek	Dillingham Road
TUCKER BRANCH	Confluence with Sni-A-Bar Creek	Truman Road
TUCKER BRANCH TRIBUTARY	Confluence with Tucker Branch	Section line 12, 7, T49N, R29W
WEST FIRE PRAIRIE CREEK	County Highway FF	Argo Road

BEST COPY AVAILABLE

The summers are warm and moderately humid, while the winters are rather dry, but not severely cold. July is the warmest month, with a normal monthly temperature of 78.8 degrees Fahrenheit (F.) and January is the coldest month, with a normal monthly temperature of 27.8 degrees F. (Reference 3).

Normal annual precipitation (at Kansas City Municipal Airport and, since October 1972, Kansas City International Airport) totals 37.0 inches. Normal monthly precipitation ranges from 1.25 inches in January and February to 4.37 inches in July. Nearly 70 percent of the normal annual precipitation falls during the warm season of April through September, generally in the form of showers and thunderstorms (Reference 3).

The topography of Jackson County consists of plains and low, open hills. Fifty to 80 percent of the land is gently sloping; steep slopes are found generally along streams. Soils along the flood plains in Jackson County range from alluvial silts along the Missouri River to loessial types of good drainage and permeability in the upland areas.

Development within the flood plains of the Missouri River, Fire Prairie Creek, and Sni-A-Bar Creek basin is mainly of an agricultural nature. Within the study reach of Mill Creek, very little development exists within the flood plain.

2.3 Principal Flood Problems

The three major floods on the Missouri River occurred in 1844, 1903, and 1951. The 1951 flood caused extensive damage to developed areas of Jackson County (Reference 4). The unincorporated parts of the county, however, are sparsely developed and flood damage is limited to agricultural land and improvements, and to small unincorporated communities.

Low-lying areas along Fire Prairie Creek are subject to periodic flooding caused by overflow from that creek. During past heavy storms, floodwaters of Fire Prairie Creek have overtopped county roads resulting in crop damage on adjacent properties.

The Little Blue River experienced a major flood in August 1982. This flood was estimated to have a frequency much greater than the 100-year storm. Since the levees which parallel this river were designed only for the 100-year flow, some overtopping of the levees occurred.

Sni-A-Bar Creek is a recognized flooding source (Reference 5). A recording station has been located 8 feet downstream of Colburn Road since 1970. Records are poor; however, the average flow is 24 cubic feet per second (cfs). Records during 1975 indicate a maximum flood on September 11. Flow was 4,300 cfs; maximum depth was 22 feet (Reference 6).

Tributaries to Sni-A-Bar Creek, and other small streams in unincorporated Jackson County, experience flooding caused by locally intense rainfall. The most prominent obstructions within flood plains of these streams are road fills and bridges.

BEST COPY AVAILABLE

2.4 Flood Protection Measures

The Missouri River has had upstream flood control measures since the 1951 flood. Major sections of the Kansas River watershed, a tributary to the Missouri River, are also controlled by manmade lakes. Local flood control projects, in the form of levees giving 500-year protection, protect the industrial bottom lands just upstream of unincorporated Jackson County. Unincorporated lands are protected by agricultural levees giving 100-year protection from Atherton to Sibley with some small locally constructed agricultural levees in Levasy.

Fire Prairie Creek has private levees on both banks along the reach studied. However, there are several breaks in the levees so this protection is limited to floods of smaller magnitude than the 100-year flood.

Other streams studied have no flood protection measures.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (one percent chance of annual occurrence) in any 50-year period is about 40 percent (four in ten), and for any 90-year period, the risk increases to about 60 percent (six in ten). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for each flooding source studied in detail affecting the community.

Peak discharge computations for Fire Prairie Creek, Mill Creek, West Branch Crawford Creek and tributaries, and tributaries to Sni-A-Bar Creek were based on a basin modeling technique of the Environmental Protection Agency (EPA) "Storm Water Management Model" (SWMM) as adopted by the COE (Reference 7). The basin modeling technique uses physical characteristics, such as area, slope, roughness coefficients, and rainfall, to compute discharges. The National Weather Service Technical Paper No. 40 (Reference 8) was used to determine the rainfall for use in the model.

BEST COPY AVAILABLE

The discharge computations for Sni-A-Bar Creek are based on a regional analysis of stage-discharge records of 70 gaging stations in the Missouri River basin, located within the State of Missouri (Reference 9). This frequency analysis followed the standard log-Pearson Type III method as outlined by the U.S. Water Resources Council (WRC) (Reference 10).

Peak discharge computations for the Missouri River were based on the long term U.S. Geological Survey (USGS) gaging station (No. 0693000) located on the Hannibal Railroad bridge at Kansas City. Records for this station have been available since 1897. This analysis followed the standard log-Pearson Type III method as outlined by the WRC (Reference 10). The 500-year frequency discharge for all sources was determined by straight-line extrapolation of a log-probability graph of flood discharges computed for frequencies up to 100 years. A summary of discharges is listed in Table 2.

The hydrologic information for the Horseshoe Creek Tributary was taken from the City of Oak Grove Flood Insurance Study (Reference 11). Discharges for this tributary were determined by use of empirical equations based upon watershed characteristics. The equations were developed by a regression technique employing log-Pearson Type III analyses of gaged streams throughout Missouri.

For the remainder of the streams studied by approximate methods, peak discharge computations were based on the EPA SWMM (Reference 7).

Peak discharges for the 10-, 50-, 100-, and 500-year floods of each flooding source studied in detail in the community are shown in Table 2.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of the streams in the community were carried out to provide estimates of the elevations of the floods of the selected recurrence intervals along each flooding source studied in detail.

Cross sectional data for Fire Prairie Creek and Mill Creek were obtained from field surveys. For Sni-A-Bar Creek and its tributaries, cross sectional data were obtained from topographic maps (Reference 12). The Missouri River cross sectional data were obtained from 2-foot contour mapping and were supplemented by hydrographic surveying of the channel (Reference 13). Cross sections were located at close intervals above and below bridges and culverts in order to compute the possible backwater effect of these structures. For the Missouri River, cross sectional data were based on established river miles.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles. For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map.

BEST COPY AVAILABLE

TABLE 2 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
MISSOURI RIVER					
At Hannibal Bridge	489,200	277,000	387,000	434,000	549,000
FIRE PRAIRIE CREEK					
At City of Levasy corporate limits	24.34	5,400	11,000	13,500	19,000
1,500 feet downstream of O'Donnell Road	22.91	5,300	11,000	13,500	18,500
At Buckner-Tarsney Road	18.20	4,700	9,600	12,000	16,000
At U.S. Highway 24	3.16	1,200	2,600	3,200	4,500
WEST FIRE PRAIRIE CREEK					
At County Highway FF	2.90	1,460	2,650	3,300	5,040
600 feet upstream of Flynn Road	1.80	510	880	1,070	1,620
2,000 feet upstream of Argo Road	0.73	290	520	650	1,000
MILL CREEK					
At State Highway 291	4.70	3,000	4,800	5,700	7,800
WEST BRANCH CRAWFORD CREEK					
At Stringtown Road	7.83	2,270	4,200	5,110	7,150
Just upstream of confluence of Tributary No. C-2	4.14	1,170	2,180	2,640	3,690
200 feet downstream of Outer Belt Road	3.41	950	1,780	2,160	3,030

BEST COPY AVAILABLE

TABLE 2 - SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
TRIBUTARY NO. C-2					
Mouth at West Branch Crawford Creek	3.43	1,070	2,000	2,420	3,420
Just upstream of confluence of Tributary No. C-1	1.26	380	700	860	1,250
2,500 feet downstream of U.S. Highway 50	0.34	100	190	230	360
TRIBUTARY NO. C-1					
Mouth at Tributary No. C-2	2.10	690	1,280	1,550	2,160
1,800 feet south of U.S. Highway 50	1.28	430	800	990	1,370
TUCKER BRANCH					
Mouth at Sni-A-Bar Creek	5.3	1,950	3,600	4,500	6,910
At Borgman Road	2.2	950	1,790	2,180	3,270
1,500 feet downstream of Fields Road	1.9	900	1,650	2,020	3,030
200 feet upstream of Fields Road	1.8	850	1,550	1,900	2,850
TUCKER BRANCH TRIBUTARY					
Mouth at Tucker Branch	2.0	880	1,700	2,210	3,410
500 feet downstream of Truman Road	1.6	790	1,410	1,780	2,720
2,000 feet upstream of Truman Road	1.1	590	1,050	1,280	1,960
TRIBUTARY NO. S-1					
Mouth at Sni-A-Bar Creek	0.7	340	600	720	1,110
2,050 feet upstream from mouth at Sni-A-Bar Creek	0.4	210	370	460	700
At Jim Owens Road	0.2	100	185	230	350

BEST COPY AVAILABLE

TABLE 2 - SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
TRIBUTARY NO. S-3					
Mouth at Sni-A-Bar Creek	3.4	970	1,790	2,160	3,010
2,700 feet upstream from mouth at Sni-A-Bar Creek	2.3	650	1,180	1,460	2,050
400 feet downstream of Jim Owens Road	2.1	640	1,130	1,410	1,980
1,200 feet upstream of Jim Owens Road	1.7	520	920	1,140	1,610
300 feet downstream of Stillhouse Road	0.9	300	550	680	960
700 feet upstream of Illinois Central Gulf Railroad	0.36	130	240	300	420
TRIBUTARY NO. S-4					
Mouth at Sni-A-Bar Creek	4.8	1,730	3,000	3,560	4,840
3,950 feet upstream from mouth at Sni-A-Bar Creek	4.77	1,500	2,600	3,140	4,300
7,150 feet upstream from mouth at Sni-A-Bar Creek	3.1	1,120	2,000	2,380	3,320
At Sweeney Road	2.6	980	1,720	2,085	2,910
500 feet upstream of County Highway BB	2.1	865	1,520	1,860	2,580
BLUE BRANCH					
Mouth at Sni-A-Bar Creek	15.5	6,970	11,500	13,780	18,180
1,700 feet downstream of Buckner-Tarsney Road	14.6	6,670	11,000	13,430	17,600
Just upstream of confluence of Tributary No. B-1	5.7	2,530	4,400	5,280	7,300
At Ryan Road	4.8	2,210	3,850	4,640	6,420

BEST COPY AVAILABLE

TABLE 2 - SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
TRIBUTARY NO. B-1					
Mouth at Blue Branch	7.1	3,890	6,350	7,470	10,050
Just upstream of confluence of Tributary No. B-2	3.3	2,120	3,400	3,940	5,260
At City of Blue Springs corporate limits	2.9	1,950	3,150	3,670	4,930
TRIBUTARY NO. B-2					
Mouth at Tributary No. B-1	3.8	2,150	3,700	4,390	6,060
1,748 feet upstream of mouth	3.3	1,860	3,120	3,780	5,250
200 feet upstream of Interstate Highway 70	1.5	810	1,410	1,720	2,400
HORSESHOE CREEK					
Mouth at Sni-A-Bar Creek	13.2	3,800	6,600	7,930	10,350
500 feet upstream of Gillespie Road	8.5	2,660	4,700	5,500	7,020
3,700 feet upstream of Gillespie Road	7.4	2,420	4,200	5,030	6,410
SEMINARY CREEK					
Mouth at Sni-A-Bar Creek	3.6	1,100	2,100	2,550	4,010
3,000 feet upstream County Highway FF	2.2	580	1,100	1,370	2,150
SWINEY BRANCH					
Mouth at Sni-A-Bar Creek	3.9	1,290	2,380	2,950	4,600
700 feet upstream of Seymour Road	3.4	1,200	2,200	2,760	2,280
800 feet downstream of Duncan Road	1.0	360	670	830	1,320

BEST COPY AVAILABLE

BLANK PAGE

BLANK PAGE

BLANK PAGE

TABLE 2 - SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
HORSESHOE CREEK TRIBUTARY					
At county boundary	1.51	850	1,310	1,510	2,020
SWINEY BRANCH TRIBUTARY					
Mouth at Swiney Branch	1.4	570	1,070	1,330	2,090
2,300 feet upstream of Rust Road	1.0	520	940	1,200	1,710
SNI-A-BAR CREEK					
At county boundary	139.0	9,880	16,200	19,680	28,000
Confluence of Tributary No. S-4	106.0	8,680	14,400	17,420	24,900
Confluence of Blue Branch	84.6	7,610	12,900	15,340	22,000
Confluence of West Fork Sni-A-Bar Creek	45.7	5,760	9,700	11,800	17,000
Confluence of Tributary No. S-5	22.3	3,810	6,600	7,960	11,600
TRIBUTARY NO. S-5					
Mouth at Sni-A-Bar Creek	5.60	1,925	3,200	3,980	5,440
At Gibson Road	4.74	1,680	2,800	3,460	4,750
600 feet upstream of Hammond Road	2.21	780	1,410	1,740	2,420
600 feet upstream of Brown Road	1.24	480	860	1,070	1,520
Downstream of Buckner-Tarsney Road	0.89	330	620	750	1,070
TRIBUTARY NO. S-3A					
Mouth at Tributary No. S-3	0.84	307	560	673	940
700 feet upstream of mouth at Tributary No. S-3	0.64	249	445	537	752
WEST FORK SNI-A-BAR CREEK					
2,200 feet downstream of Litchford Road	28.20	5,360	7,990	9,370	12,320
At City of Lake Lotawana corporate limits	13.45	2,640	3,700	4,220	5,040

BEST COPY AVAILABLE

Channel roughness coefficients (Manning's "n") for hydraulic computations for streams studied in detail were established by field inspections and are as follows:

Stream Name	"n" Value Channel	"n" Value Flood Plain
Fire Prairie Creek	0.035 - 0.037	0.045 - 0.05
Mill Creek	0.06	0.07
Missouri River	0.013	0.05
Crawford Creek	0.035	0.050
Sni-A-Bar Creek basin	0.04 - 0.07	0.05 - 0.08
Horseshoe Creek Tributary	0.03 - 0.05	0.05 - 0.09

Starting water-surface elevations for Fire Prairie Creek, Mill Creek, and Sni-A-Bar Creek basin were based on normal depth analysis. For the Missouri River, starting water-surface elevations were determined by developing a rating curve from the gaging station (No. 068955) at Waverly, Missouri, in operation since October 1928. The hydraulic information for Horseshoe Creek Tributary was taken from the City of Oak Grove Flood Insurance Study (Reference 11). Starting water-surface elevations for this tributary were determined using the slope-area method.

Water-surface elevations of floods for selected recurrence intervals for Fire Prairie Creek, Mill Creek, and Sni-A-Bar Creek basin were computed using the COE HEC-2 step-backwater computer program (Reference 14). Water-surface elevations of floods for selected recurrence intervals for the Missouri River were computed using the Kansas City District COE step-backwater computer program (Reference 15). Water-surface elevations for approximate studies were determined using Manning's equation and approximating the depth of stream. Channel shape was determined from USGS topographic maps, and depth of stream was applied to these maps to determine approximate limits.

Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals.

The hydraulic analyses for this study are based only on the effects of unobstructed flow. The flood elevations as shown on the profiles are, therefore, considered valid only if hydraulic structures, in general, remain unobstructed and if channel and overbank conditions remain essentially the same as ascertained during this study.

All elevations are referenced from National Geodetic Vertical Datum of 1929 (NGVD); elevation reference marks used in the study are shown on the maps.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

BEST COPY AVAILABLE

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by FEMA as the base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the boundaries of the 100-year and the 500-year floods have been delineated using the elevations determined at each cross section; between cross sections the boundaries were interpolated using topographic maps at a scale of 1:24000, and 1:4800 with contour intervals of 10 and 5 feet (References 16 and 12).

The flood boundaries for the approximate study streams were taken from the Type 15 Draft of the Unincorporated Areas of the County of Jackson, Missouri Flood Insurance Study (Reference 17).

Along the Missouri River, portions of th agricultural land are protected by a levee system. Because this levee will provide protection against the 100-year flood, the 100-year flood boundary in these areas is designated as the levee. The 100- and 500-year flood boundaries for the lower reach of the Little Blue River were delineated based on the backwater elevations from the Missouri River.

The boundaries of the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map. Small areas within the flood boundaries may lie above the flood elevations and, therefore, not be subject to flooding; owing to lack of detailed topographical information or to limitations of the map scale, such areas are not shown. In cases where the 100-year and the 500-year flood boundaries are close together, only the 100-year boundary has been shown.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity, increases the flood heights of streams, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent flood plain areas that must be kept free of encroachment in order that the 100-year flood may be carried without substantial increases in flood heights. Minimum standards of FEMA limit such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced.

The floodways recommended for this study were computed on the basis of equal conveyance reduction from each side of the flood plain, except in cases where the limits of encroachment were set in order to attain the 1.0-foot limitation.

BEST COPY AVAILABLE

The results of these computations were tabulated at selected cross sections for each stream segment for which a floodway was computed (Table 3).

Portions of the floodways for the Missouri River, Fire Prairie Creek, and Mill Creek lie outside of Jackson County. For portions of the areas where the 100-year levee protects land along the Missouri River, the levee determines the floodway boundary.

As shown on the Flood Boundary and Floodway Map, the floodway widths were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the boundaries of the floodway and the 100-year flood are either close together or collinear, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

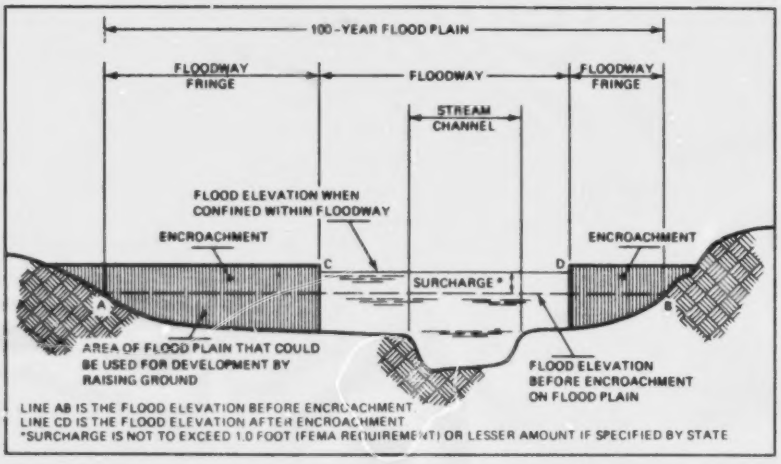

100-YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE *
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE AB IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE CD IS THE FLOOD ELEVATION AFTER ENCROACHMENT
*SURCHARGE IS NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE

FIGURE 2 - Floodway Schematic

The floodways in this report are recommended to local agencies as minimum standards that can be adopted or that can be used as a basis for additional studies.

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, FEMA has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors (FHF), and flood insurance zone designations for each flooding source affecting the County of Jackson.

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NCVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
MISSOURI RIVER								
A	333.12	4411	70,006	6.3	713.0	713.0	713.8	0.8
B	334.23	2419	40,730	10.7	713.9	713.9	714.7	0.8
C	334.57	3402	50,988	8.5	715.3	715.3	716.1	0.8
D	335.00	4654	65,777	6.6	716.7	716.7	717.7	1.0
E	335.52	3830	59,706	7.3	717.3	717.3	718.2	0.9
F	335.87	2735	57,346	7.6	717.9	717.9	718.8	0.9
G	336.16	2922	61,775	7.0	718.3	718.3	719.2	0.9
H	336.20	3123	60,851	7.1	718.4	718.4	719.3	0.9
I	336.42	3339	72,930	6.0	719.1	719.1	720.1	1.0
J	337.00	3361	68,597	6.3	719.2	719.2	720.1	0.9
K	337.13	4363	95,496	4.5	719.9	719.9	720.8	0.9
L	337.49	7300	120,882	3.6	720.5	720.5	721.5	1.0
M	338.00	11,200	163,674	2.7	721.9	721.9	722.9	1.0
N	339.12	12,221	195,651	2.2	722.4	722.4	723.4	1.0
O	340.00	14,666	221,046	2.0	722.8	722.8	723.8	1.0
P	341.00	13,408	185,998	2.3	723.0	723.0	724.0	1.0
Q	341.44	10,536	143,844	3.0	723.0	723.0	724.0	1.0
R	342.25	3851	61,101	7.0	723.0	723.0	724.0	1.0
S	343.38	3271	54,396	7.9	723.7	723.7	724.5	0.8
T	344.23	4068	68,705	6.3	725.3	725.3	726.3	0.9
U	344.88	3752	59,031	7.3	725.8	725.8	726.7	0.9
V	345.68	3727	59,210	7.3	727.4	727.4	728.1	0.7
W	346.41	5919	87,057	4.9	728.9	728.9	729.7	0.8
X	347.18	7531	104,505	4.1	729.7	729.7	730.5	0.8
Y	348.19	8010	110,197	3.9	730.5	730.5	731.3	0.8
Z	348.66	7831	125,185	3.4	730.9	730.9	731.8	0.9

[1]MILES ABOVE MOUTH
[2]THIS WIDTH EXTENDS BEYOND COUNTY BOUNDARY

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

MISSOURI RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
SNI-A-BAR CREEK								
AA	63,548	2200	3555	4.3	785.5	785.5	785.7	0.2
AB	67,927	1500	5199	3.0	790.6	790.6	791.4	0.8
AC	70,579	1930	7866	2.0	792.5	792.5	793.0	0.5
AD	72,649	1620	7846	2.0	793.2	793.2	793.8	0.6
AE	75,541	1600	6052	1.9	793.9	793.9	794.5	0.6
AF	76,978	1350	4609	2.6	794.7	794.7	795.3	0.6
AG	80,254	1200	2728	4.3	798.8	798.8	799.3	0.5
AH	80,894	1092	4037	2.9	800.4	800.4	800.5	0.1
AI	81,359	1061	6024	2.0	800.7	800.7	800.8	0.1
AJ	82,416	1560	5122	2.3	801.0	801.0	801.2	0.2
AK	83,810	1300	3953	2.4	801.3	801.3	801.9	0.6
AL	86,457	161	1355	6.9	803.6	803.6	804.3	0.7
AM	88,048	323	1195	7.8	808.0	808.0	808.1	0.1
AN	89,645	935	2624	3.5	811.3	811.3	811.7	0.4
AO	91,406	930	4082	2.3	813.0	813.0	813.3	0.3
AP	93,482	546	2001	4.7	814.7	814.7	815.0	0.3
AQ	98,012	950	4356	2.1	819.0	819.0	819.9	0.9
AR	102,182	840	2350	3.4	822.3	822.3	822.8	0.5
AS	105,208	1094	3923	2.0	824.6	824.6	825.3	0.7
AT	106,956	570	1690	4.7	825.8	825.8	826.3	0.5
AU	108,395	415	1788	4.5	828.4	828.4	829.0	0.6
AV	112,628	335	1122	1.2	833.3	833.3	833.8	0.5
AW	113,542	68	267	5.2	833.7	833.7	834.1	0.4
AX	114,592	50	194	7.2	838.6	838.6	838.6	0.0

[1]FEET ABOVE COUNTY BOUNDARY

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

SNI-A-BAR CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
WEST FORK SNI-A-BAR CREEK								
A	3439	870	1662	5.6	795.5	795.5	795.7	0.2
B	4562	830	3509	2.7	798.8	798.8	799.3	0.5
C	6238	820	4000	2.3	800.1	800.1	800.6	0.5
D	8152	890	3940	2.4	801.2	801.2	801.9	0.7
E	8788	850	4215	2.2	801.6	801.6	802.5	0.9
F	11,202	770	5121	1.8	805.7	805.7	806.5	0.8
G	11,838	608	1971	4.8	805.9	805.9	806.7	0.8
H	12,601	520	2561	3.7	808.3	808.3	809.0	0.7
I	14,565	850	3491	2.7	811.0	811.0	811.6	0.6
J	16,059	1169	5775	1.6	812.2	812.2	812.7	0.5
K	17,656	844	3585	2.6	813.1	813.1	813.7	0.6
L	20,618	534	3253	2.9	815.8	815.8	816.2	0.4
M	21,585	557	1626	5.8	816.5	816.5	817.0	0.5
N	22,669	389	2760	3.4	818.4	818.4	819.2	0.8
O	23,727	1438	11,612	0.8	818.8	818.8	819.6	0.8
P	27,333	574	1104	8.5	818.8	818.8	819.6	0.8
Q	27,993	552	2359	4.0	822.1	822.1	823.0	0.9
R	28,341	897	3685	2.5	822.9	822.9	823.8	0.9
S	30,751	133	1200	7.8	826.4	826.4	827.0	0.6
T	31,755	497	3240	1.3	828.1	828.1	829.0	0.9
U	34,020	177	2417	1.7	828.3	828.3	829.2	0.9
V	34,810	503	3765	1.1	828.4	828.4	829.2	0.8
W	36,613	772	4538	0.9	828.6	828.6	829.4	0.8
X	38,147	443	2198	1.9	828.8	828.8	829.6	0.8
Y	40,525	331	1637	2.6	832.7	832.7	833.2	0.5
Z	42,481	435	2380	1.8	833.6	833.6	834.2	0.6
AA	43,556	92	600	7.0	834.1	834.1	834.7	0.6
AB	45,152	314	1361	3.1	838.2	838.2	839.0	0.8

[1]FEET ABOVE MOUTH

BEST COPY AVAILABLE

REVISED, 9-4-86

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

WEST FORK SNI-A-BAR CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
MISSOURI RIVER								
AA	348.81	7883[4]	118,740	3.6	730.9	730.9	731.8	0.9
AB	349.17	8034[4]	108,270	4.0	731.2	731.2	731.8	0.6
AC	352.74	1895[5]	37,242	11.5	733.6	733.6	734.2	0.6
AD	352.99	3040[5]	50,955	8.4	734.7	734.7	735.4	0.7
HORSESHOE CREEK								
A	3670[2]	658	2569	3.1	749.3	749.3	750.0	0.7
B	3876[2]	624	2025	3.9	750.1	750.1	750.5	0.4
C	4592[2]	719	3372	2.4	751.9	751.9	752.8	0.9
D	5920[2]	843	3868	1.4	752.9	752.9	753.7	0.8
E	6591[2]	604	3108	1.8	753.3	753.3	754.0	0.7
F	6983[2]	723	3740	1.5	753.6	753.6	754.2	0.6
G	7814[2]	1064/ 710[6]	2936	1.7	754.2	754.2	754.7	0.5
H	9247[2]	1331/1000[6]	2559	2.0	755.7	755.7	755.9	0.2
I	11,162[2]	796/320[6]	1968	2.6	758.3	758.3	758.3	0.0
J	11,616[2]	1355/110[6]	1797	2.8	759.2	759.2	759.2	0.0
K	12,033[2]	734/270[6]	1982	2.5	760.9	760.9	761.0	0.1
L	12,653[2]	703/300[6]	2613	1.9	762.0	762.0	762.0	0.0
HORSESHOE CREEK TRIBUTARY								
A	211[3]	88	322	4.7	793.9	793.9	794.8	0.9

[1]MILES ABOVE MOUTH
[2]FEET ABOVE MOUTH
[3]FEET ABOVE CORPORATE LIMITS OF CITY OF OAK GROVE
[4]THIS WIDTH EXTENDS BEYOND COUNTY BOUNDARY
[5]THIS WIDTH EXTENDS WITHIN AREA NOT INCLUDED
[6]TOTAL WIDTH / WIDTH WITHIN UNINCORPORATED AREA

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO

(UNINCORPORATED AREAS)

FLOODWAY DATA

MISSOURI RIVER - HORSESHOE CREEK - HORSESHOE CREEK TRIBUTARY

BEST COPY AVAILABLE

BLANK PAGE

BLANK PAGE

BLANK PAGE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
SNI–A–BAR CREEK								
A	0	1300/660[2]	6873	3.1	740.4	740.4	741.1	0.7
B	2460	1695	8788	2.2	741.4	741.4	742.2	0.8
C	8380	1913	6623	3.0	744.9	744.9	745.5	0.6
D	10,312	1605	6905	2.9	746.7	746.7	747.0	0.3
E	11,320	1120	2986	6.6	747.4	747.4	747.6	0.2
F	11,679	1733	3072	6.4	749.3	749.3	749.4	0.1
G	13,619	1500	8482	2.3	753.2	753.2	753.6	0.4
H	21,417	1460	6878	2.9	758.9	758.9	759.6	0.7
I	23,328	601	4548	4.3	760.1	760.1	761.0	0.9
J	24,382	994	7323	2.7	761.3	761.3	762.0	0.7
K	28,381	550	3567	5.5	764.7	764.7	765.5	0.8
L	29,860	2412	11,398	1.7	766.0	766.0	766.7	0.7
M	34,196	2318	13,410	1.5	767.2	767.2	767.7	0.5
N	36,000	2561	15,679	1.3	767.5	767.5	768.1	0.6
O	37,410	877	2909	6.8	769.3	769.3	769.4	0.1
P	38,699	1015	7948	2.5	771.7	771.7	772.1	0.4
Q	44,381	600	3189	5.5	772.6	772.6	773.3	0.7
R	44,982	390	2582	6.7	773.5	773.5	773.9	0.4
S	46,125	1099	8176	2.1	776.2	776.2	776.4	0.2
T	47,234	2064/1900[2]	14,541	1.2	776.4	776.4	776.7	0.3
U	48,632	1730	4985	3.5	776.8	776.8	777.0	0.2
V	51,437	1420	6244	2.5	779.1	779.1	779.7	0.6
W	53,611	1165	6273	2.4	780.4	780.4	781.1	0.7
X	56,902	2195	10,278	1.5	782.8	782 8	783.4	0.6
Y	58,266	2488	10,847	1.4	783.4	783.4	783.9	0.5
Z	60,135	2926	10,778	1.4	783.9	783.9	784.2	0.3

[1]FEET ABOVE COUNTY BOUNDARY
[2]TOTAL WIDTH / WIDTH WITHIN UNINCORPORATED AREA

FIRST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

SNI-A-BAR CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
FIRE PRAIRIE CREEK								
A	5.049	1476[3]	11,894	0.7	723.1	723.1	723.9	0.8
B	5.525	1553	11,559	1.2	723.6	723.6	724.3	0.7
C	5,957	1760	7029	1.9	724.0	724.0	724.7	0.7
D	6,350	1694	11,072	1.2	724.5	724.5	725.3	0.8
E	6.722	1603[3]	6926	2.0	724.9	724.9	725.6	0.7
F	7.044	675[3]	2786	4.8	726.1	726.1	726.7	0.6
G	7.225	1199[3]	6143	2.2	727.5	727.5	728.3	0.8
H	7.427	1177[3]	6983	1.7	730.0	730.0	730.6	0.6
I	7.705	1692	9219	1.3	730.3	730.3	730.9	0.6
J	8.175	2189	6750	1.8	730.6	730.6	731.2	0.6
K	8.323	2155	9119	1.3	732.3	732.3	732.9	0.6
WEST FIRE PRAIRIE CREEK								
A	130[2]	123	948	3.5	773.2	773.2	773.5	0.3
B	733[2]	77	708	4.7	773.9	773.9	774.6	0.7
C	1947[2]	87	857	3.9	776.6	776.6	777.4	0.8
D	3583[2]	62	640	5.2	780.6	780.6	781.2	0.6
E	4136[2]	39	394	8.4	783.3	783.3	783.8	0.5
F	4240[2]	53	606	5.4	786.9	786.9	787.4	0.5
G	4457[2]	117	1343	2.5	787.4	787.4	788.0	0.6
H	4926[2]	101	1193	2.8	787.6	787.6	788.2	0.6
I	6679[2]	26	143	7.5	790.5	790.5	791.1	0.6
J	7172[2]	38	199	5.4	796.0	796.0	796.0	0.0
K	7506[2]	31	134	8.0	798.9	798.9	798.9	0.0

[1]MILES ABOVE MOUTH
[2]FEET ABOVE COUNTY HIGHWAY FF
[3]THIS WIDTH EXTENDS WITHIN AREA NOT INCLUDED

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

FIRE PRAIRIE CREEK - WEST FIRE PRAIRIE CREEK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
SEMINARY CREEK								
A	1711	500	976	2.6	741.8	740.5[4]	741.2	0.7
B	2785	500	1658	1.6	742.6	742.6	743.3	0.7
C	3598	350	926	2.8	744.2	744.2	744.5	0.3
D	4449	350	983	2.5	746.4	746.4	747.3	0.9
E	5320	252	1009	2.5	749.0	749.0	749.4	0.4
F	6744	250	1111	2.3	750.8	750.8	751.3	0.5
G	9241	159	485	5.3	755.2	755.2	755.3	0.1
H	9825	125	707	3.6	757.8	757.8	758.1	0.3
I	10,527	103	802	3.2	759.0	759.0	759.5	0.5
J	10,962	46	388	6.6	759.8	759.8	760.5	0.7
K	12,237	139	1071	2.4	762.7	762.7	763.6	0.9
L	13,080	95	563	4.5	764.0	764.0	764.9	0.9
M	13,724	251	2134	0.6	769.2	769.2	770.1	0.9
N	14,732	87	753	1.8	769.3	769.3	770.2	0.9
O	15,202	75	645	2.1	769.5	769.5	770.4	0.9
P	16,059	66	476	2.9	770.2	770.2	771.2	1.0
Q	17,163	105	750	1.8	771.2	771.2	772.1	0.9
R	17,715	71	468	2.9	771.7	771.7	772.5	0.8
S	18,862	74	361	3.8	774.9	774.9	775.1	0.2
T	19,895	71	348	3.9	778.9	778.9	779.0	0.1
U	21,000	150	712	1.9	781.1	781.1	781.2	0.1
MILL CREEK								
A	4.493[2]	113	1212	4.7	777.8	777.8	778.8	1.0
B	4.825[2]	215[3]	1088	5.2	783.2	783.2	783.9	0.7
C	5.123[2]	70	537	10.6	795.3	795.3	796.3	1.0
D	5.290[2]	61	472	10.6	803.3	803.3	804.0	0.7

[1] FEET ABOVE MOUTH
[2] MILES ABOVE MOUTH
[3] THIS WIDTH EXTENDS WITHIN AREA NOT INCLUDED
[4] ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM SNI-A-BAR CREEK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

SEMINARY CREEK - MILL CREEK

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
WEST BRANCH CRAWFORD CREEK								
A	25	560	3019	1.7	898.0	898.0	898.0	0.0
B	1031	350	749	6.8	898.1	898.1	898.2	0.1
C	1780	450	2517	2.0	899.5	899.5	900.2	0.7
D	2278	233	1066	4.8	900.3	900.3	900.9	0.6
E	2545	210	682	7.5	901.9	901.9	902.2	0.3
F	3365	185	1254	4.1	904.3	904.3	905.3	1.0
G	4053	310	2183	2.3	905.0	905.0	906.0	1.0
H	4893	256	1707	3.0	905.5	905.5	906.3	0.8
I	5900	280	1560	1.7	906.1	906.1	906.9	0.8
J	6954	319	1397	1.9	906.5	906.5	907.2	0.7
K	7595	170	620	4.3	907.3	907.3	907.8	0.5
L	9187	302	1065	2.5	909.6	909.6	910.0	0.4
M	10,654	99	317	6.8	912.4	912.4	912.4	0.0
N	11,228	85	377	5.7	915.1	915.1	915.2	0.1
O	11,614	115	410	5.3	917.8	917.8	917.8	0.0
P	12,292	105	274	4.7	919.9	919.9	919.9	0.0
Q	13,452	56	145	8.9	926.7	926.7	926.7	0.0
R	15,097	111	262	4.9	938.9	938.8	938.8	0.0
S	16,178	100	242	5.3	943.9	943.9	943.9	0.0
T	16,566	68	172	7.5	946.6	946.6	946.7	0.1
U	16,902	110	372	3.5	950.8	950.8	951.0	0.2
V	17,519	127	231	5.6	952.0	952.0	952.2	0.2
W	17,997	62	277	4.7	954.5	954.5	954.5	0.0
X	18,833	60	212	6.1	957.0	957.0	957.1	0.1

[1]FEET ABOVE LIMIT OF DETAILED STUDY 2200 FEET DOWNSTREAM FROM STRINGTOWN ROAD

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

WEST BRANCH CRAWFORD CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
TRIBUTARY NO. B–1								
A	883	126	991	7.5	800.0	796.2[2]	796.7	0.5
B	1578	224	1711	4.4	800.0	793.6[2]	799.4	0.8
C	2498	169	1437	5.2	804.4	804.4	804.7	0.3
D	3270	123	1259	5.9	805.6	805.6	806.0	0.4
E	4178	58	726	5.4	807.2	807.2	807.8	0.6
F	5161	74	449	8.8	809.6	809.6	810.6	1.0
G	6218	44	493	8.0	816.6	816.6	816.8	0.2
H	7396	45	464	8.5	820.5	820.5	821.3	0.8
I	8284	130	867	4.2	823.7	823.7	824.6	0.9
J	8677	54	553	6.6	824.5	824.5	825.4	0.9
K	9440	67	573	6.4	826.7	826.7	827.5	0.8
TRIBUTARY NO. B–2								
A	1026	62	981	4.5	811.3	811.3	811.5	0.2
B	5412	83	531	7.1	820.5	820.5	820.9	0.4
C	9424	57	226	7.6	839.1	839.1	839.7	0.6
D	10,261	37	224	7.7	847.3	847.3	847.3	0.0

[1]FEET ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM BLUE BRANCH

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

TRIBUTARY NO. B-1 - TRIBUTARY NO. B-2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
TRIBUTARY NO. S-3								
A	3912	34	207	7.1	755.1	754.0[2]	754.5	0.5
B	5327	53	432	3.4	760.2	760.2	761.1	0.9
C	6332	81	509	2.9	761.9	761.9	762.7	0.8
D	7382	55	376	3.8	763.8	763.8	764.7	0.9
E	8565	74	466	3.0	768.0	768.0	768.8	0.8
F	10,153	76	399	2.9	771.0	771.0	771.1	0.1
G	10,773	64	215	5.3	773.0	773.0	773.0	0.0
H	11,958	62	299	3.8	779.8	779.8	779.8	0.0
I	13,185	56	193	5.9	783.0	783.0	783.0	0.0
J	13,668	88	403	2.8	785.7	785.7	785.7	0.0
K	14,510	56	171	6.7	789.4	789.4	789.4	0.0
L	15,259	169	437	2.6	794.4	794.4	794.4	0.0
TRIBUTARY NO. S-3A								
A	1297	189	215	3.1	756.0	756.0	756.0	0.0
B	2217	213	530	1.3	761.1	761.1	761.1	0.0
C	3357	44	86	7.9	766.3	766.3	766.3	0.0
D	4160	112	242	2.2	774.5	774.5	774.5	0.0
E	5416	80	139	3.8	780.9	780.9	780.9	0.0
F	6488	99	213	2.5	788.3	788.3	788.3	0.0

[1] FEET ABOVE MOUTH
[2] ELEVATION WITHOUT CONSIDERING OVERFLOW EFFECT FROM SNI-A-BAR CREEK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

TRIBUTARY NO. S-3 - TRIBUTARY NO. S-3A

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
TRIBUTARY NO. S–4								
A	2823	91	434	7.2	769.6	764.0[2]	765.0	1.0
B	4654	302	1243	1.9	771.7	771.7	772.6	0.9
C	5583	183	826	2.9	773.3	773.3	774.3	1.0
D	6763	59	425	4.9	776.4	776.4	777.3	0.9
E	8000	119	904	2.3	779.2	779.2	779.8	0.6
F	9477	78	388	5.4	781.8	781.8	782.2	0.4
G	10,698	143	587	3.6	787.7	787.7	787.7	0.0
H	11,640	77	354	5.3	791.8	791.8	791.8	0.0
I	12,874	75	458	4.1	797.4	797.4	797.4	0.0
J	13,479	138	1286	1.4	803.2	803.2	803.2	0.0
K	14,441	91	606	3.1	803.6	803.6	803.6	0.0

[1]FEET ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING OVERFLOW EFFECT FROM SNI–A–BAR CREEK

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

TRIBUTARY NO. S-4

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
TRIBUTARY NO. C–1								
A	921	44	164	9.5	907.2	907.2	907.2	0.0
B	2067	232	722	2.1	910.1	910.1	911.0	0.9
C	3000	234	1324	1.2	916.2	916.2	916.2	0.0
D	4000	125	570	2.7	916.4	916.4	916.5	0.1
E	5000	41	199	7.8	917.3	917.3	917.7	0.4
F	6000	68	295	5.3	921.7	921.7	922.6	0.9
G	7158	156	496	3.1	924.8	924.8	925.6	0.8
H	8333	47	111	8.9	929.1	929.1	929.1	0.0
I	9387	33	154	6.4	938.2	938.2	939.2	1.0
J	10,000	27	138	7.2	941.5	941.5	942.4	0.9
K	10,879	34	142	7.0	947.4	947.4	948.0	0.6
TRIBUTARY NO. C–2								
A	724	268	1798	1.3	906.5	906.5	907.5	1.0
B	1483	235	1274	1.9	906.8	906.8	907.8	1.0
C	2000	271	1314	1.8	906.9	906.9	907.9	1.0
D	3000	65	361	2.4	907.3	907.3	908.3	1.0
E	4000	73	139	6.2	908.9	908.9	909.3	0.4
F	4518	49	130	6.6	914.7	914.7	914.7	0.0
G	4968	67	176	4.9	922.9	922.9	922.9	0.0
H	5798	76	167	5.2	929.1	929.1	929.1	0.0
I	6766	32	91	9.4	938.3	938.3	938.3	0.0

[1]FEET ABOVE MOUTH

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

TRIBUTARY NO. C-1 - TRIBUTARY NO. C-2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
TRIBUTARY NO. S-1								
A	2400	35	73	6.3	753.3	749.2[3]	749.2	0.0
B	3521	79	173	2.7	755.1	755.1	755.6	0.5
C	4400	71	82	5.6	760.1	760.1	760.2	0.1
D	5318	62	91	2.5	765.2	765.2	765.2	0.0
E	6169	26	34	6.7	773.8	773.8	773.8	0.0
F	7087	53	92	2.5	781.1	781.1	781.1	0.0
G	8313	29	36	6.4	793.7	793.7	793.7	0.0
H	9186	53	61	3.8	810.5	810.5	810.5	0.0
TRIBUTARY NO. S-2								
A	4257[2]	277	686	0.8	758.4	758.4	758.4	0.0
B	5000[2]	41	72	7.8	760.4	760.4	760.4	0.0
C	5587[2]	40	97	5.7	762.7	762.7	762.7	0.0
D	6413[2]	64	106	5.3	771.1	771.1	771.1	0.0
E	7288[2]	46	125	4.5	777.3	777.3	777.3	0.0
F	8272[2]	38	111	5.1	782.7	782.7	782.7	0.0
G	9289[2]	40	118	4.7	788.5	788.5	788.5	0.0

[1] FEET ABOVE COUNTY HIGHWAY H
[2] FEET ABOVE MOUTH
[3] ELEVATIONS WITHOUT CONSIDERING OVERFLOW EFFECT FROM SNI-A-BAR CREEK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

TRIBUTARY NO. S-1 - TRIBUTARY NO. S-2

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
TRIBUTARY NO. S-5								
A	1275	900	2640	1.5	821.5	821.5	821.5	0.0
B	2096	709	1063	3.7	822.8	822.8	822.9	0.1
C	3089	123	690	5.8	825.3	825.3	825.7	0.4
D	3664	250	942	4.2	827.4	827.4	827.6	0.2
E	4341	223	716	4.8	830.6	830.6	830.6	0.0
F	5983	256	865	4.0	834.2	834.2	834.6	0.4
G	7146	73	440	7.9	837.3	837.3	838.0	0.7
H	8959	175	778	3.7	845.2	845.2	845.4	0.2
I	9793	64	480	6.0	847.0	847.0	847.3	0.3
J	10,208	54	372	7.7	848.5	848.5	849.1	0.6
K	10,584	53	432	4.0	850.7	850.7	850.9	0.2
L	11,376	49	310	5.6	852.3	852.3	852.4	0.1
M	13,256	42	267	6.5	859.9	859.9	860.0	0.1
N	14,120	42	262	6.7	864.1	864.1	864.3	0.2
O	14,718	70	380	4.6	866.7	866.7	866.9	0.2
P	15,934	56	290	6.0	870.6	870.6	871.0	0.4
Q	16,854	54	337	5.2	873.9	873.9	874.6	0.7
R	17,900	175	738	2.4	878.3	878.3	878.9	0.6
S	19,000	127	282	3.8	881.4	881.4	882.1	0.7
T	20,547	125	346	3.1	887.2	887.2	887.2	0.0
U	21,067	46	159	6.7	889.0	889.0	889.4	0.4
V	21,772	45	203	5.3	894.1	894.1	894.6	0.5
W	22,550	57	188	5.7	898.6	898.6	899.2	0.6
X	23,983	28	130	5.8	908.8	908.8	909.3	0.5
Y	24,875	28	121	6.2	920.8	920.8	921.6	0.8
Z	25,794	41	88	8.5	935.1	935.1	935.1	0.0
AA	26,270	36	106	7.1	944.8	944.8	945.2	0.4
AB	26,871	44	101	7.4	955.9	955.9	955.9	0.0

[1] FEET ABOVE MOUTH

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

TRIBUTARY NO. S-5

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
TUCKER BRANCH								
A	2000	377	1132	4.0	746.7	745.0[2]	745.8	0.8
B	2903	571	1846	2.4	747.2	747.2	748.1	0.9
C	3798	242	1087	4.1	749.0	749.0	749.8	0.8
D	4588	300	1696	2.7	750.8	750.8	751.7	0.9
E	5967	428	1484	3.0	753.0	753.0	753.8	0.8
F	6662	190	1965	2.3	760.5	760.5	761.0	0.5
G	7171	346	2690	1.7	760.6	760.6	761.1	0.5
H	8137	177	1387	3.2	761.1	761.1	761.6	0.5
I	9167	100	765	5.9	762.3	762.3	762.8	0.5
J	10,464	105	908	5.0	765.5	765.5	766.2	0.7
K	11,810	375	1616	2.8	767.9	767.9	768.7	0.8
L	13,685	73	686	3.2	769.9	769.9	770.7	0.8
M	14,496	81	829	2.6	770.3	770.3	771.1	0.8
N	15,745	141	724	3.0	773.2	773.2	774.0	0.8
O	17,356	45	192	11.4	783.4	783.4	783.5	0.1
P	18,493	47	449	4.5	789.3	789.3	790.3	1.0
Q	19,941	72	260	7.8	794.0	794.0	794.0	0.0
R	21,646	61	213	8.9	803.0	803.0	803.0	0.0
S	23,083	105	425	4.5	810.8	810.8	810.8	0.0
T	24,298	85	390	4.9	814.0	814.0	814.0	0.0
U	25,337	61	231	8.2	818.8	818.8	818.8	0.0
V	26,405	168	653	2.9	823.4	823.4	823.4	0.0

[1]FEET ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM SNI-A-BAR CREEK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUCKER BRANCH

BEST COPY AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
TUCKER BRANCH TRIBUTARY								
A	450	45	278	8.0	770.5	770.0[2]	771.0	1.0
B	800	52	373	5.9	773.6	773.6	773.8	0.2
C	1536	92	768	2.9	778.2	778.2	778.8	0.6
D	2370	118	1022	1.7	778.7	778.7	779.4	0.7
E	3852	68	741	2.4	788.6	788.6	788.9	0.3
F	4907	86	346	5.1	789.3	789.3	790.1	0.8
G	6629	61	312	4.1	798.5	798.5	798.8	0.3
H	7678	97	297	4.3	801.8	801.8	801.8	0.0
I	8623	67	196	6.5	808.9	808.9	808.9	0.0
J	9698	51	327	3.9	818.7	818.7	818.7	0.0
BLUE BRANCH								
A	3221	764	3254	4.2	779.2	779.2	780.1	0.9
B	4372	1218	6583	2.0	781.3	781.3	782.3	1.0
C	7499	517	3432	3.9	784.6	784.6	785.5	0.9
D	8999	283	2344	5.7	787.3	787.3	788.2	0.9
E	10,131	235	2632	5.1	790.0	790.0	791.0	1.0
F	13,414	384	4438	3.0	800.0	800.0	800.6	0.6
G	15,587	99	1054	5.0	804.0	804.0	804.6	0.6
H	16,673	267	1814	2.9	805.4	805.4	806.1	0.7
I	17,448	100	1005	5.3	806.2	806.2	806.9	0.7
J	18,584	74	747	7.1	808.4	808.4	809.2	0.8
K	19,873	89	774	6.0	812.6	812.6	813.3	0.7
L	21,550	58	536	8.7	818.6	818.6	819.4	0.8
M	22,947	71	662	7.0	824.8	824.8	825.7	0.9
N	23,732	406	1494	3.1	827.4	827.4	828.3	0.9
O	24,133	87	576	8.1	828.4	828.4	829.1	0.7

[1]FEET ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT TUCKER BRANCH

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO

(UNINCORPORATED AREAS)

FLOODWAY DATA

TUCKER BRANCH TRIBUTARY - BLUE BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
SWINEY BRANCH								
A	1671	370	1240	2.4	772.7	771.0[2]	772.0	1.0
B	2579	243	1119	2.6	772.9	772.9	773.9	1.0
C	3804	217	1029	2.2	775.2	775.2	776.1	0.9
D	4662	316	736	3.1	777.0	777.0	777.9	0.9
E	6700	84	527	4.3	783.0	783.0	783.5	0.5
F	8149	51	369	4.0	788.2	788.2	788.5	0.3
G	8892	77	550	2.7	794.3	794.3	795.0	0.7
H	9909	141	469	3.1	796.3	796.3	796.9	0.6
I	12,061	106	358	2.3	804.8	804.8	804.8	0.0
J	13,181	41	95	8.8	811.4	811.4	811.4	0.0
K	13,686	48	230	3.6	816.8	816.8	816.8	0.0
L	14,715	37	105	6.2	822.4	822.4	822.4	0.0
M	15,176	40	158	4.1	827.2	827.2	827.2	0.0
N	16,000	24	69	9.5	838.1	838.1	838.1	0.0
O	17,150	46	180	3.6	851.3	851.3	851.3	0.0
P	18,433	24	102	6.4	860.3	860.3	860.3	0.0

[1]FEET ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM SNI-A-BAR CREEK

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOODWAY DATA

SWINEY BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
SWINEY BRANCH TRIBUTARY								
A	884	55	229	6.0	787.0	787.0	787.0	0.0
B	2132	178	517	3.1	792.4	792.4	792.4	0.0
C	2637	304	537	3.1	795.2	795.2	795.2	0.0
D	3061	62	225	6.2	797.1	797.1	797.1	0.0
E	4340	114	499	2.8	801.6	801.6	801.6	0.0
F	5448	59	194	7.0	805.8	805.8	805.8	0.0
G	7206	120	505	2.6	812.7	812.7	812.7	0.0
H	8157	90	158	7.8	816.1	816.1	816.1	0.0
I	9355	85	327	4.5	829.4	829.4	829.4	0.0
J	10,182	68	227	6.7	834.6	834.6	834.6	0.0
K	11,000	89	364	3.3	840.1	840.1	840.1	0.0

[1]FEET ABOVE MOUTH

BEST COPY AVAILABLE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO

(UNINCORPORATED AREAS)

FLOODWAY DATA

SWINEY BRANCH TRIBUTARY

5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach.

Average Difference Between 10- and 100-year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot
7.1 to 12 feet	2.0 feet
More than 12 feet	3.0 feet

The locations of the reaches determined for the County of Jackson are shown on the Flood Profiles and are summarized in Table 4, "Flood Insurance Zone Data."

5.2 Flood Hazard Factors

The FHF is used to correlate flood information with insurance rate tables. Correlations between property damage from floods and their FHFs are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest 0.5 foot, and shown as a three-digit code. For example, if the difference between water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year flood water-surface elevations is greater than 10.0 feet, accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective FHFs, the entire unincorporated areas of the County of Jackson were divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations:

Zone A:	Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods; no base flood elevations are shown or FHFs determined.
Zones A1-A8, A10-A12:	Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations are shown, and zones subdivided according to FHF.

BEST COPY AVAILABLE

Zone B:	Areas between the Special Flood Hazard Area and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; or areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
Zone C:	Areas of minimal flooding.

Table 4, "Flood Insurance Zone Data," summarizes the flood elevation differences, FHFs, flood insurance zones, and base flood elevations for each flooding source studied in detail in the community.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for the County of Jackson is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by FEMA.

6.0 OTHER STUDIES

A number of flood related studies have been prepared for various portions of Jackson County. These include "Flood Plain Information Reports" for Blue River, Brush Creek, Indian Creek, and Round Grove Creek (References 18 and 19). These streams are located within Kansas City, Missouri, an area not included in this report, and no comparison between specific reports were made.

Flood Insurance Studies have been published for the contiguous counties of Clay, Ray and Cass in Missouri and Johnson and Wyandotte in Kansas (References 20-24). Within the County of Jackson, Flood Insurance Studies have been published for the Cities of Oak Grove, Blue Springs, Grandview, Greenwood, Kansas City, Lake Lotawana, Lee's Summit, Raytown and Sugar Creek (References 11, 25, and 26-32). These studies are all in agreement with this study.

A discrepancy in the flood boundaries exists between this study and the Flood Insurance Studies for the Cities of Grain Valley, Levasy and Independence and the Vilage of Tarsney Lakes (References 33-36). Upon investigation, it was found that the discrepancies are the result of the more recent and more detailed hydrologic and hydraulic analyses presented in this study.

BEST COPY AVAILABLE

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
MISSOURI RIVER							
REACH 1	0050,0075	−3.8	−1.3	2.5	040	A8	VARIES–SEE MAP
HORSESHOE CREEK							
REACH 1	0134,0142	−1.3	−0.4	0.6	015	A3	VARIES–SEE MAP
HORSESHOE CREEK TRIBUTARY							
REACH 1	0145	−1.4	−0.3	0.7	015	A3	VARIES–SEE MAP
SNI–A–BAR CREEK							
REACH 1	0133,0134,0141 0142,0145,0208 0210	−1.8	−0.5	1.1	020	A4	VARIES–SEE MAP
REACH 2	0208,0210	−1.3	−0.4	0.8	015	A3	VARIES–SEE MAP
WEST FORK SNI–A–BAR CREEK							
REACH 1	0145,0205,0210	−1.4	−0.4	0.8	015	A3	VARIES–SEE MAP
REACH 2	0205	−1.8	−0.3	0.8	020	A4	VARIES–SEE MAP

[1]FLOOD INSURANCE RATE MAP PANEL
[2]WEIGHTED AVERAGE
[3]ROUNDED TO NEAREST FOOT

BEST COPY AVAILABLE

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

MISSOURI RIVER - HORSESHOE CREEK - HORSESHOE CREEK TRIBUTARY - SNI-A-BAR CREEK - WEST FORK SNI-A-BAR CREEK -

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
FIRE PRAIRIE CREEK							
REACH 1	0075	−1.7	−0.4	0.5	015	A3	VARIES-SEE MAP
REACH 2	0075	−2.0	−0.5	0.7	020	A4	VARIES-SEE MAP
REACH 3	0075	−2.6	−0.3	0.5	025	A5	VARIES-SEE MAP
WEST FIRE PRAIRIE CREEK							
REACH 1	0127	−4.8	−1.5	1.7	050	A10	VARIES–SEE MAP
REACH 2	0127,0129	−5.8	−1.7	1.7	060	A12	VARIES–SEE MAP
REACH 3	0129	−2.0	−0.7	1.7	020	A4	VARIES–SEE MAP
SEMINARY CREEK							
REACH 1	0132,0134	−2.3	−0.5	1.0	025	A5	VARIES–SEE MAP
MILL CREEK							
REACH 1	0050	−3.1	−1.0	1.0	030	A6	VARIES–SEE MAP
REACH 2	0050	−2.0	−0.7	1.0	020	A4	VARIES–SEE MAP
WEST BRANCH CRAWFORD CREEK							
REACH 1	0212,0216,0218	−1.7	−0.5	0.9	015	A3	VARIES–SEE MAP

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

FIRE PRAIRIE CREEK - WEST FIRE PRAIRIE CREEK - SEMINARY CREEK - MILL CREEK - WEST BRANCH CRAWFORD CREEK

BEST COPY AVAILABLE

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
TRIBUTARY NO. B-1							
REACH 1	0137	-2.8	-0.7	1.5	030	A6	VARIES-SEE MAP
TRIBUTARY NO. B-2							
REACH 1	0137	-5.3	-1.6	3.6	055	A11	VARIES-SEE MAP
REACH 2	0137	-2.4	-0.8	1.5	025	A5	VARIES-SEE MAP
TRIBUTARY NO. C-1							
REACH 1	0216,0218	-2.0	-0.3	0.7	020	A4	VARIES-SEE MAP
REACH 2	0216	-1.3	-0.3	0.6	015	A3	VARIES-SEE MAP
TRIBUTARY NO. C-2							
REACH 1	0218	-2.0	-0.5	0.9	020	A4	VARIES-SEE MAP
REACH 2	0216,0218	-1.2	-0.4	0.8	010	A2	VARIES-SEE MAP
TRIBUTARY NO. S-1							
REACH 1	0142	-0.7	-0.2	0.5	005	A1	VARIES-SEE MAP

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

TRIBUTARY NO. B-1 - TRIBUTARY NO. B-2 - TRIBUTARY NO. C-1 - TRIBUTARY NO. C-2 - TRIBUTARY NO. S-1

BEST COPY AVAILABLE

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
TRIBUTARY NO. S–2							
REACH 1	0134,0142	–1.1	–0.3	0.6	010	A2	VARIES–SEE MAP
TRIBUTARY NO. S–3							
REACH 1	0141,0142	–2.3	–0.7	1.1	025	A5	VARIES–SEE MAP
TRIBUTARY NO. S–3A							
REACH 1	0142	–1.3	–0.3	0.5	015	A3	VARIES–SEE MAP
TRIBUTARY NO. S–4							
REACH 1	0133	–2.1	–0.7	1.2	020	A4	VARIES–SEE MAP
REACH 2	0133	–5.2	–2.2	4.3	050	A10	VARIES–SEE MAP
TRIBUTARY NO. S–5							
REACH 1	0208,0210	–2.2	–0.6	1.0	020	A4	VARIES–SEE MAP
REACH 2	0208,0216	–1.1	–0.2	0.5	010	A2	VARIES–SEE MAP

[1]FLOOD INSURANCE RATE MAP PANEL
[2]WEIGHTED AVERAGE
[3]ROUNDED TO NEAREST FOOT

BEST COPY AVAILABLE

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

TRIBUTARY NO. S-2 - TRIBUTARY NO. S-3 - TRIBUTARY NO. S-3A - TRIBUTARY NO. S-4 - TRIBUTARY NO. S-5

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
TUCKER BRANCH							
REACH 1	0134	−2.0	−0.8	0.9	020	A4	VARIES–SEE MAP
REACH 2	0133,0134	−2.7	−0.8	1.4	025	A5	VARIES–SEE MAP
TUCKER BRANCH TRIBUTARY							
REACH 1	0134	−3.5	−0.9	1.3	035	A7	VARIES–SEE MAP
REACH 2	0134	−4.8	−2.2	1.3	050	A10	VARIES–SEE MAP
REACH 3	0131,0133,0134	−1.8	−0.6	1.1	020	A4	VARIES–SEE MAP
BLUE BRANCH							
REACH 1	0141	−1.4	−0.6	0.8	015	A3	VARIES–SEE MAP
REACH 2	0137,0140,0141	−3.5	−0.9	1.6	035	A7	VARIES–SEE MAP
SWINEY BRANCH							
REACH 1	0141	−1.0	−0.2	1.2	010	A2	VARIES–SEE MAP
REACH 2	0129,0133,0141	−2.3	−0.7	1.6	025	A5	VARIES–SEE MAP
SWINEY BRANCH TRIBUTARY							
REACH 1	0133,0141	−1.9	−0.6	1.4	020	A4	VARIES–SEE MAP

[1]FLOOD INSURANCE RATE MAP PANEL
[2]WEIGHTED AVERAGE
[3]ROUNDED TO NEAREST FOOT

BEST COPY AVAILABLE

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

TUCKER BRANCH - TUCKER BRANCH TRIBUTARY - BLUE BRANCH - SWINEY BRANCH - SWINEY BRANCH TRIBUTARY

Fire Prairie Creek, Mill Creek, the Little Blue River and the Missouri River were all studied by detailed methods. Streams studied by approximate methods are all in agreement with the original Flood Insurance Study for the County of Jackson. This updated Flood Insurance Study differs from the original Flood Insurance Study in the depth of analysis devoted to several lesser streams in the east-central and southeastern portion of the county. Differences between the two studies are therefore the result of the more detailed nature of the methods of analysis applied to these several streams.

This report either supersedes or is compatible with all previous studies published on streams studied in this report and should be considered authoritative for the purposes of the National Flood Insurance Program.

7.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, Federal Emergency Management Agency, 911 Walnut Street, Kansas City, Missouri 64106.

8.0 REFERENCES AND BIBLIOGRAPHY

1. U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Number of Inhabitants, Missouri, Final Report PC80-1-A27, Washington, D.C., 1981.

2. U.S. Army Corps of Engineers, Kansas City District, Social and Environmental Inventory-1975, Kansas City Metropolitan Region, Kansas City, Missouri, 1975.

3. National Oceanographic and Atmospheric Administration, Climatological Data-Annual Summary, Missouri, Volume 80, No. 13, 1976.

4. Missouri Geological Survey and Water Resources, Magnitude and Frequency of Missouri Floods, 1968.

5. Mid-America Regional Council, Storm Drainage Study, Kansas City, Missouri, 1971.

6. U.S. Geological Survey, Water Resources for Missouri, Water Year 1975.

7. U.S. Environmental Protection Agency, Storm Water Management Model, March 1973.

8. U.S. Department of Commerce, Weather Bureau, Technical Paper No. 40, Rainfall Frequency Atlas of the United States (durations from 30 minutes to 24 hours and return periods from 1 to 100 years), 1961.

9. U.S. Army Corps of Engineers, Kansas City District, State of Missouri, Frequency Stucy, Missouri River Basin, November 28, 1979 (unpublished).

BEST COPY AVAILABLE

10. U.S. Water Resources Council, Hydrology Committee, Guidelines for Determining Flood Flow Frequency, Washington, D.C., 1976.

11. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, City of Oak Grove, Missouri, September 1979.

12. U.S. Water Resources Council, Aerial Photography and Photogrammetric Mapping, Scale 1:4800, Contour Interval 5 feet: December 1979.

13. U.S. Army Corps of Engineers, Kansas City District, Missouri River Flood Plain Maps, Contour Interval 2 feet: 1975 (unpublished).

14. U.S. Army Corps of Engineers, Hydrologic Engineering Center, Computer Program 723-X6-L202A, HEC-2 Water-Surface Profiles User's Manual, Davis, California, October 1973.

15. ————, Kansas City Step-Backwater Program, Koontz, (unpublished).

16. U.S. Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24000, Contour Interval 10 feet: Elm, Missouri, 1962; Buckner, Missouri, 1965; Strasburg, Missouri, 1954; Missouri City, Missouri, 1965; Pleasant Hill, Missouri, 1954; Liberty, Missouri, 1965; Bates City, Missouri, 1951; Tarsney Lakes, Missouri, 1965; Chapel Hill, Missouri, 1963; Oak Grove, Missouri, 1965; Camden, Missouri, 1951; Blue Springs, Missouri, 1965; Lake Jacomo, Missouri, 1975.

17. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, County of Jackson, Unincorporated Areas, Missouri, September 1978.

18. U.S. Army Corps of Engineers, Kansas City District, Flood Plain Information Report-Blue River, Brush Creek and Indian Creek within Kansas City, Missouri, April 1970.

19. ————, Flood Plain Information Report-Round Grove Creek within Kansas City, Missouri, July 1975.

20. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, County of Clay, Unincorporated Areas, Missouri, March 1980.

21. ————, Flood Insurance Study, County of Ray, Unincorporated Areas, Missouri, (in progress).

22. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, County of Cass, Unincorporated Areas, Missouri, March 1978.

BEST COPY AVAILABLE

23. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, County of Johnson, Unincorporated Areas, Kansas, August 1980.

24. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, County of Wyandotte, Unincorporated Areas, Kansas, December 1979.

25. ————, Federal Insurance Administration, Flood Insurance Study, City of Blue Springs, Missouri, March 1978 (revision in progress).

26. ————, Federal Insurance Administration, Flood Insurance Study, City of Grandview, Missouri, June 1979.

27. ————, Federal Insurance Administration, Flood Insurance Study, City of Greenwood, Missouri, July 1978.

28. ————, Federal Insurance Administration, Flood Insurance Study, City of Kansas City, Missouri, September 1978.

29. ————, Federal Insurance Administration, Flood Insurance Study, City of Lake Lotawana, Missouri, November 1979.

30. ————, Federal Insurance Administration, Flood Insurance Study, City of Lee's Summit, Missouri, June 1977.

31. ————, Federal Insurance Administration, Flood Insurance Study, City of Raytown, Missouri, September 1978.

32. ————, Federal Insurance Administration, Flood Insurance Study, City of Sugar Creek, Missouri, July 1978.

33. ————, Federal Insurance Administration, Flood Insurance Study, City of Grain Valley, Missouri, August 1979.

34. ————, Federal Insurance Administration, Flood Insurance Study, City of Levasy, Missouri, March 1978.

35. ————, Federal Insurance Administration, Flood Insurance Study, City of Independence, Missouri, August 1978.

36 ————, Federal Insurance Administration, Flood Insurance Study, Village of Tarsney Lakes, Missouri, October 1976.

Federal Emergency Management Agency, Flood Insurance Study, City of Kansas City, Kansas, August 1981.

U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, City of Buckner, Missouri, March 1978.

BEST COPY AVAILABLE

9.0 REVISIONS DESCRIPTION (Revised: September 4, 1986)

9.1 Purpose

The purpose of this Flood Insurance Study Revisions Description is to incorporate new or revised data into this currently effective Flood Insurance Study for the Unincorporated Areas of Jackson County, Missouri. This Revisions Description is intended to provide updated information that aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

9.2 Acknowledgments

The data for this Revisions Description were obtained from the Flood Insurance Study for the Village of Tarsney Lakes, Jackson County, Missouri (Reference 1). The Federal Emergency Management Agency (FEMA) reviewed and accepted these data for purposes of this revision.

9.3 Scope

Due to the recent disincorporation of the Village of Tarsney Lakes, all flood delineations that were previously shown in the Flood Insurance Study for the Village of Tarsney Lakes have been updated and delineated in the Flood Insurance Study for Jackson County. This includes a 0.5-mile reach of West Fork Sni-A-Bar Creek downstream of Buckner Tarsney Road, Wood Lake, and Wood Lake Creek, and Tarsney Lake and Tarsney Lake Creek.

9.4 Location of Data

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, FEMA, Federal Office Building, Room 300, 911 Walnut Street, Kansas City, Missouri 64106.

9.5 References and Bibliography

1. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Village of Tarsney Lakes, Jackson County, Missouri, June 1980.

BEST COPY AVAILABLE

FLOOD PROFILES

MISSOURI RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

01P

BEST COPY AVAILABLE

FLOOD PROFILES

MISSOURI RIVER

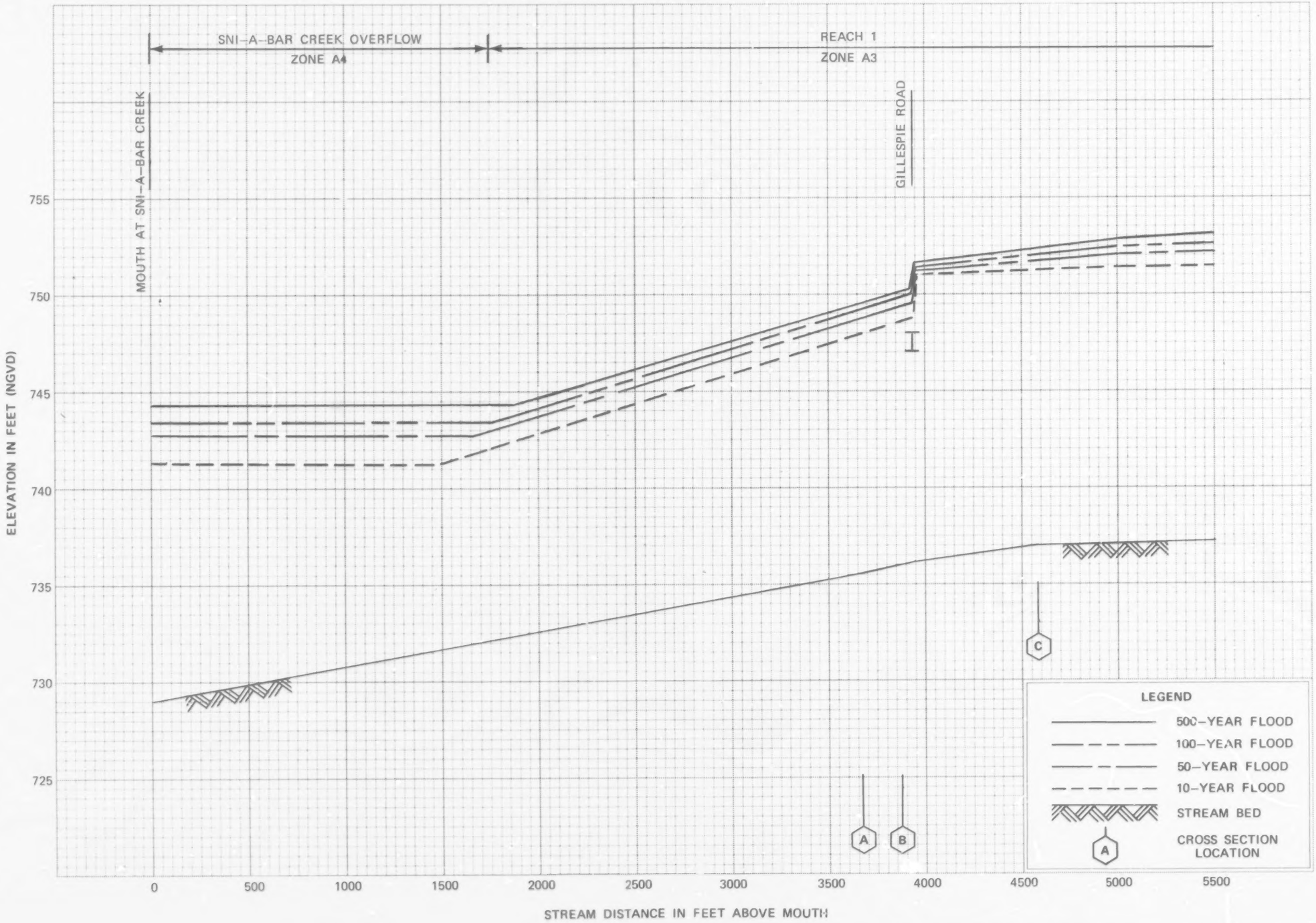
FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO

(UNINCORPORATED AREAS)

02P

BEST COPY AVAILABLE



FLOOD PROFILES

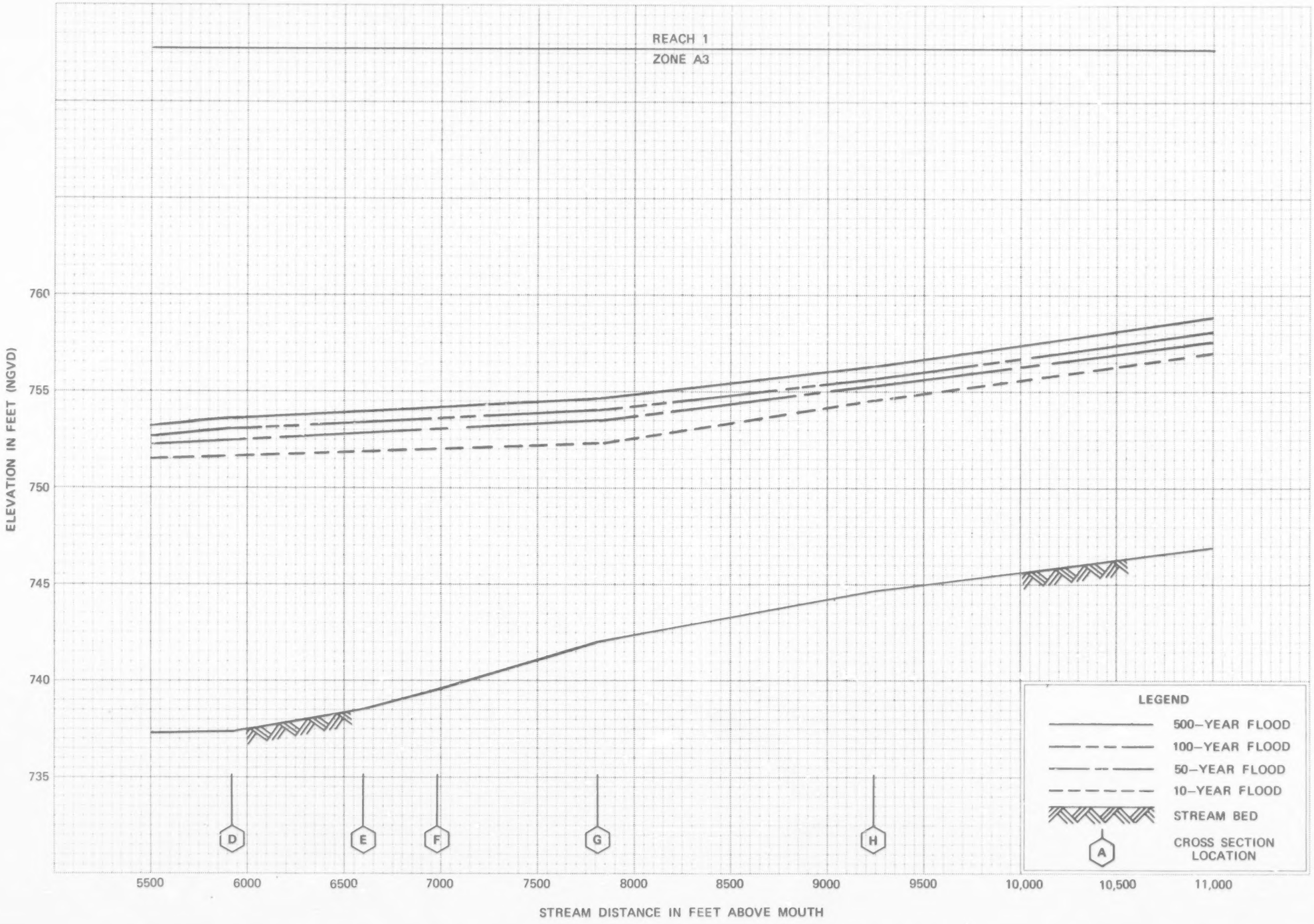
HORSESHOE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

03P

BEST COPY AVAILABLE



FLOOD PROFILES

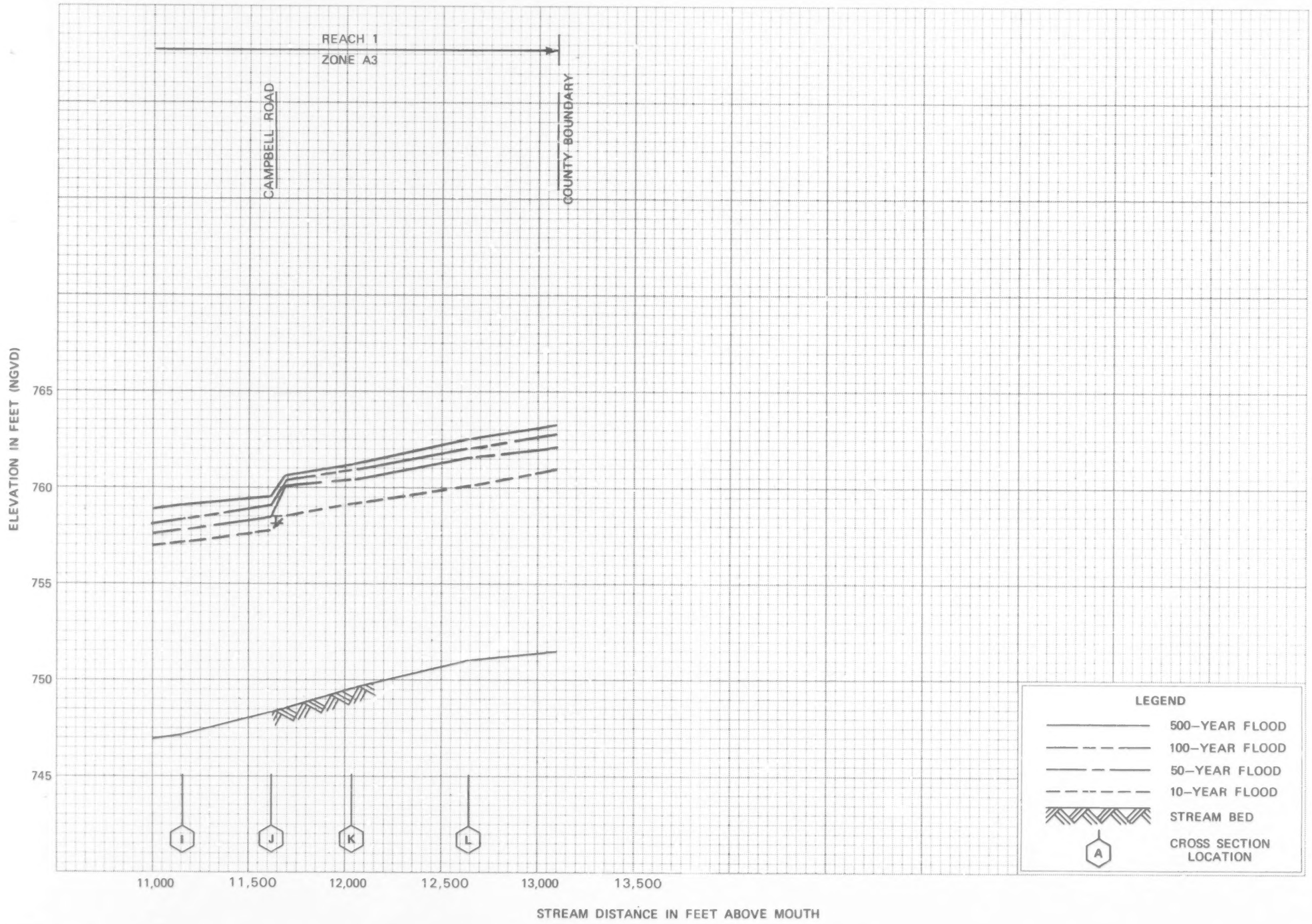
HORSESHOE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

04P

BEST COPY AVAILABLE



FLOOD PROFILES

HORSESHOE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

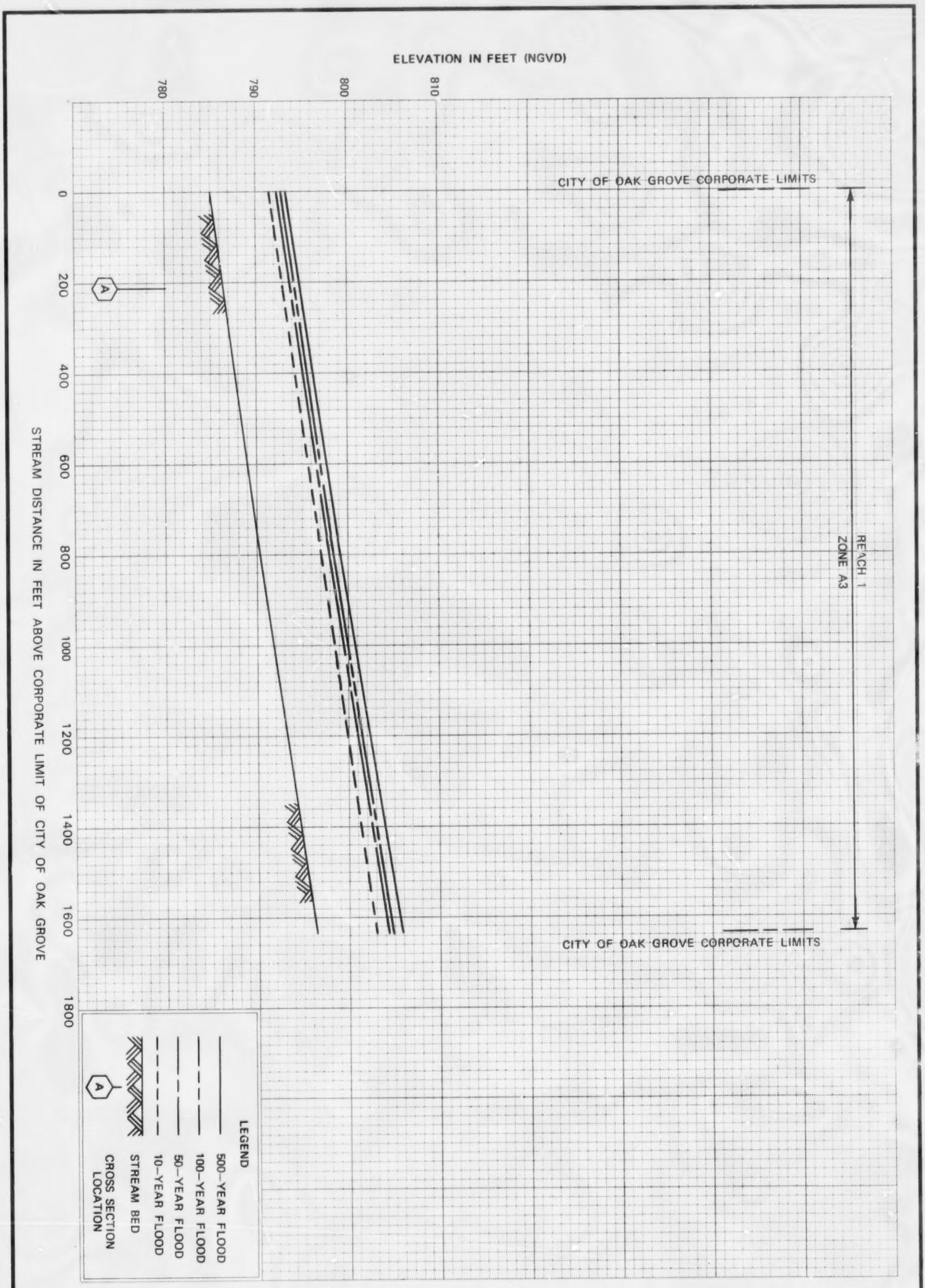
05P

BEST COPY AVAILABLE

BLANK PAGE

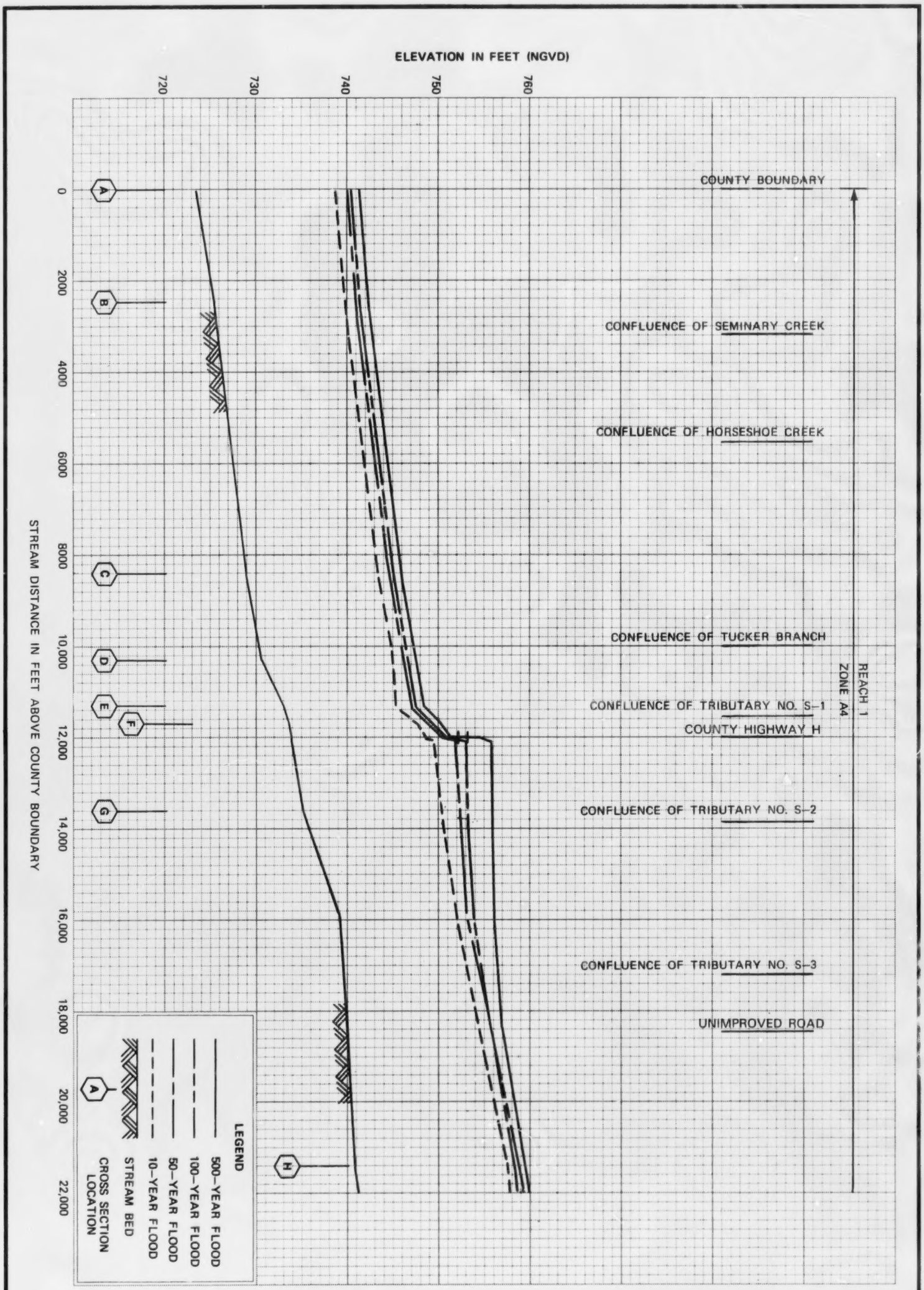
BLANK PAGE

BLANK PAGE



06P	FEDERAL EMERGENCY MANAGEMENT AGENCY **COUNTY OF JACKSON, MO** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **HORSESHOE CREEK TRIBUTARY**

BEST COPY AVAILABLE



07P

FEDERAL EMERGENCY MANAGEMENT AGENCY

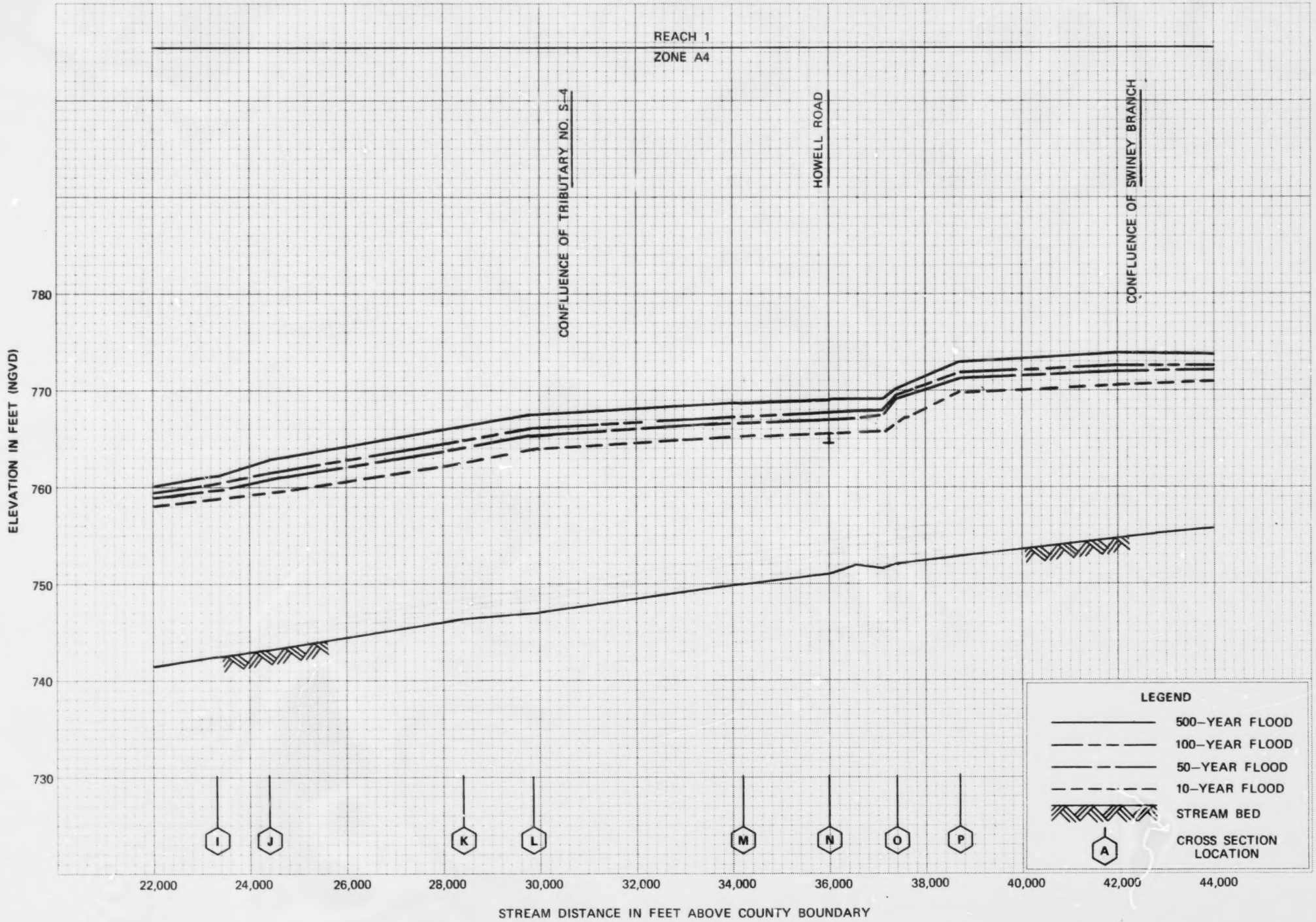
COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOOD PROFILES

SNI-A-BAR CREEK

53

BEST COPY AVAILABLE



FLOOD PROFILES

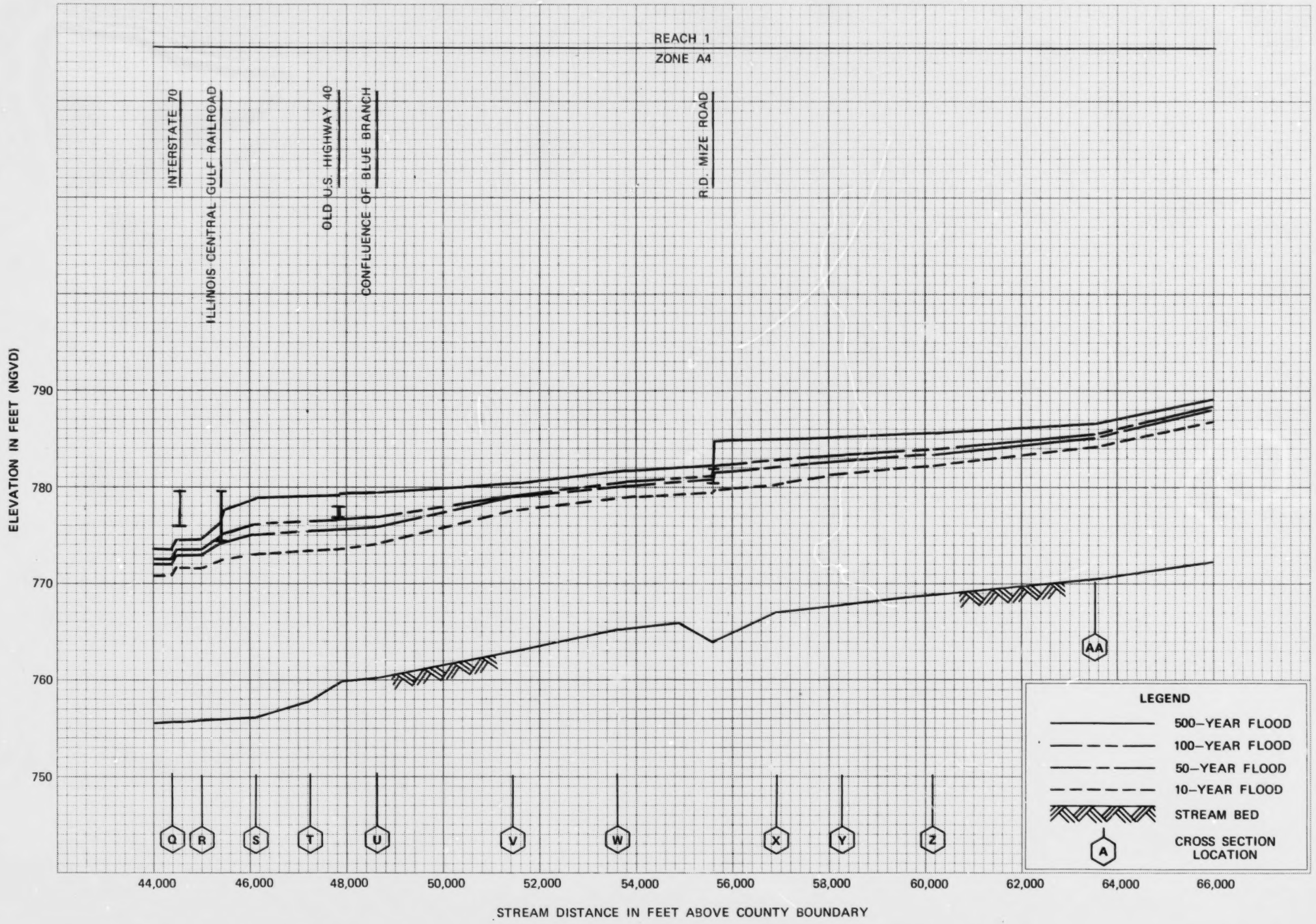
SNI-A-BAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

08P

BEST COPY AVAILABLE



FLOOD PROFILES

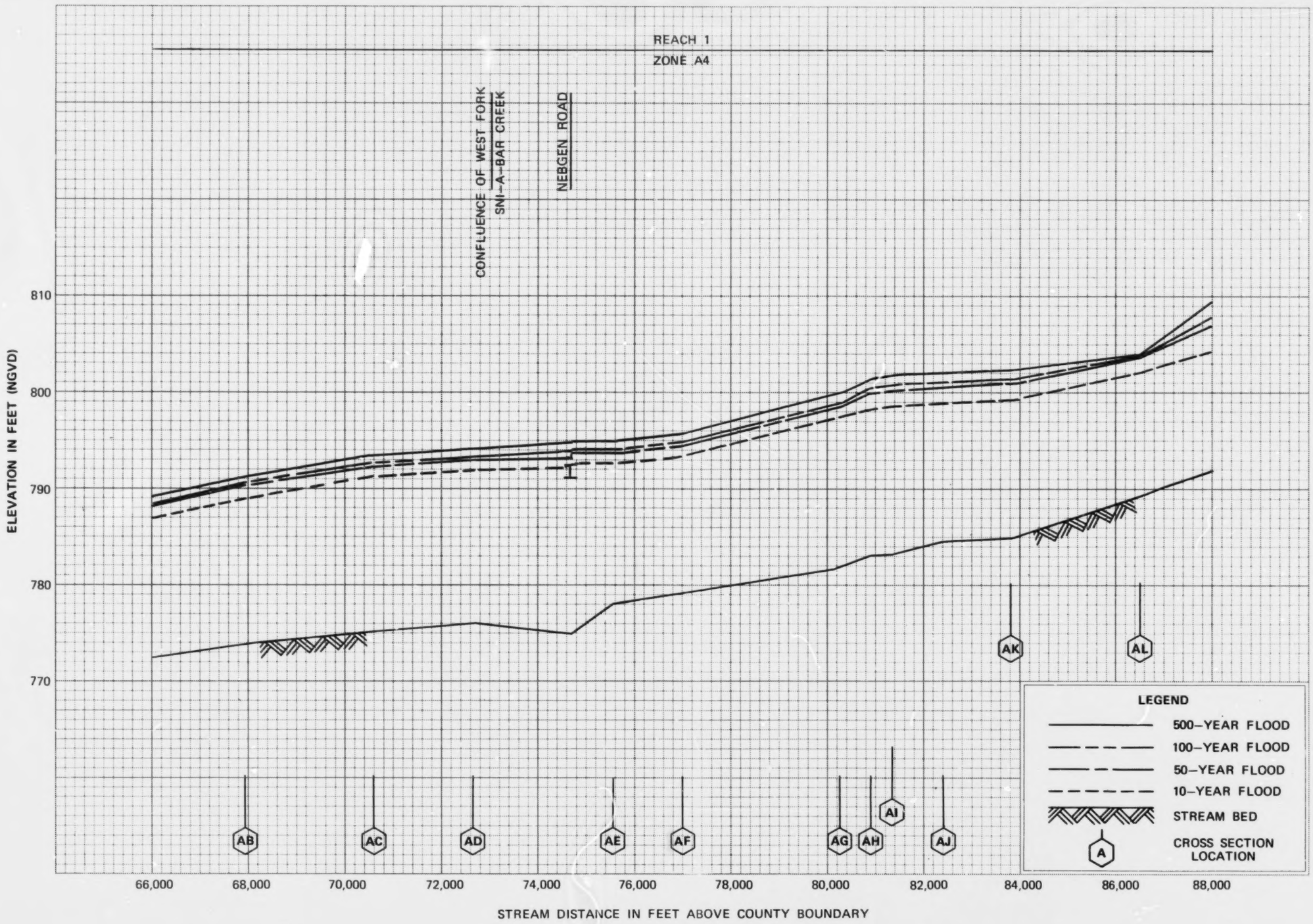
SNI-A-BAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

09P

BEST COPY AVAILABLE



FLOOD PROFILES

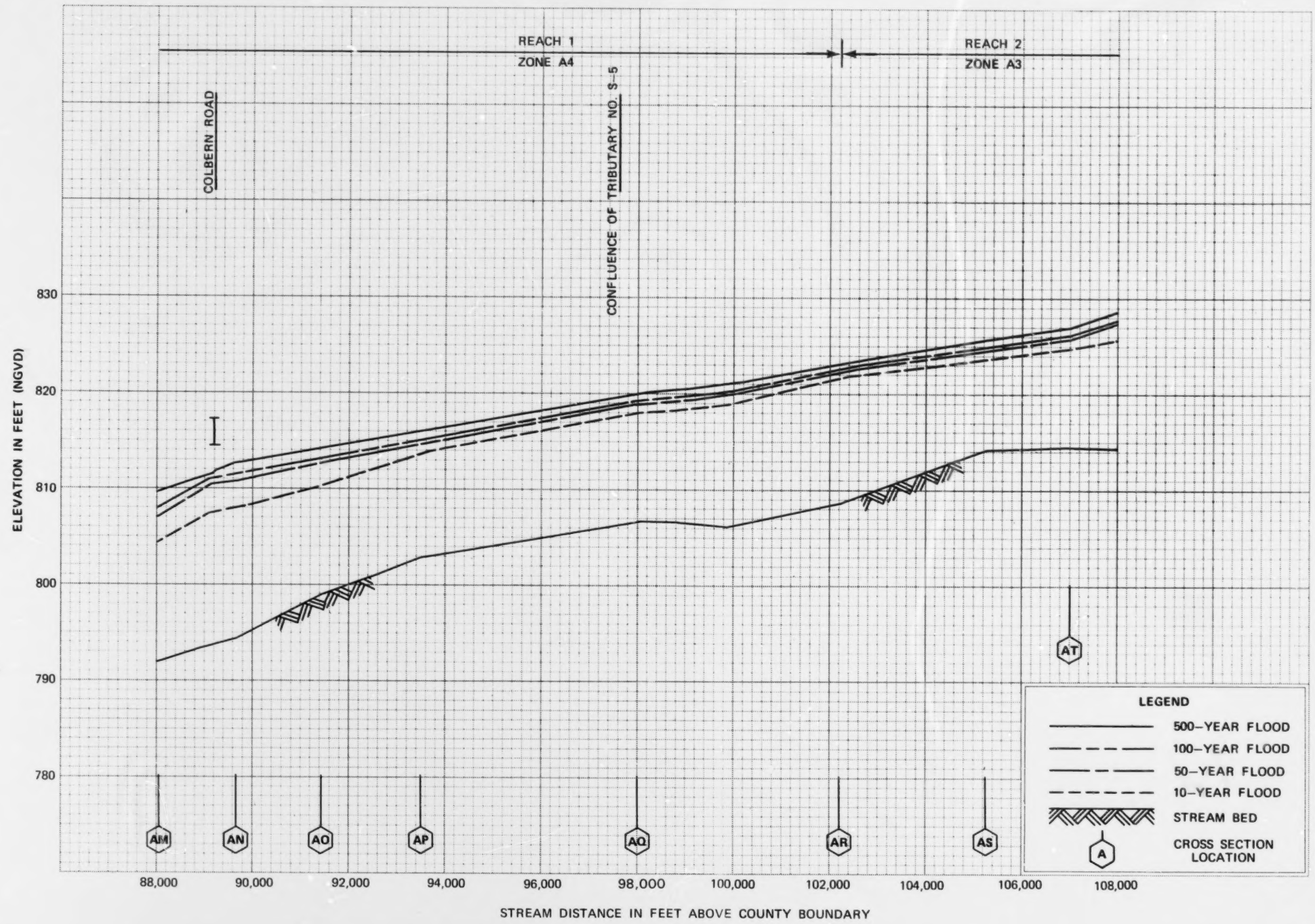
SNI-A-BAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

10P

BEST COPY AVAILABLE



FLOOD PROFILES

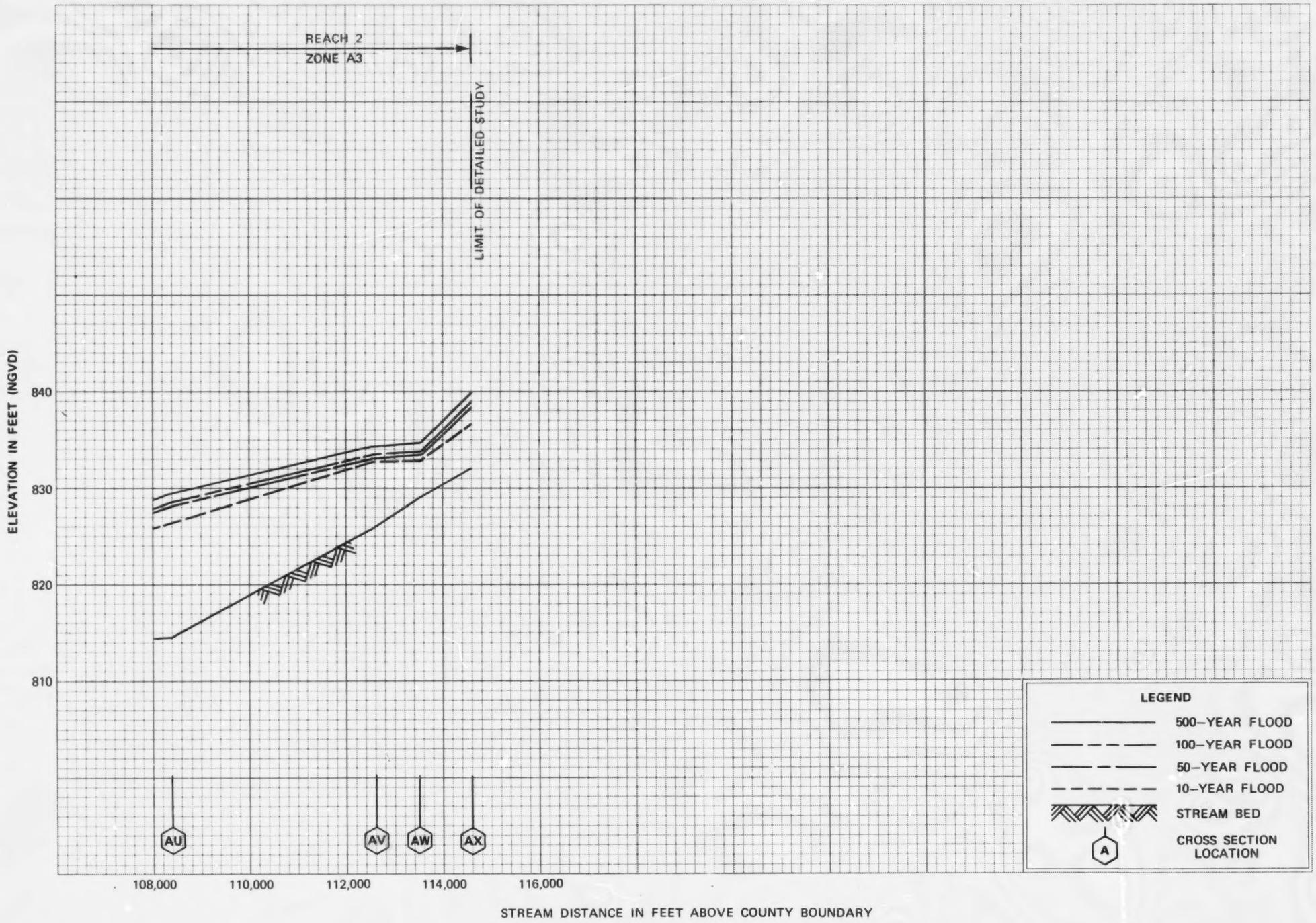
SNI-A-BAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

11P

BEST COPY AVAILABLE



FLOOD PROFILES

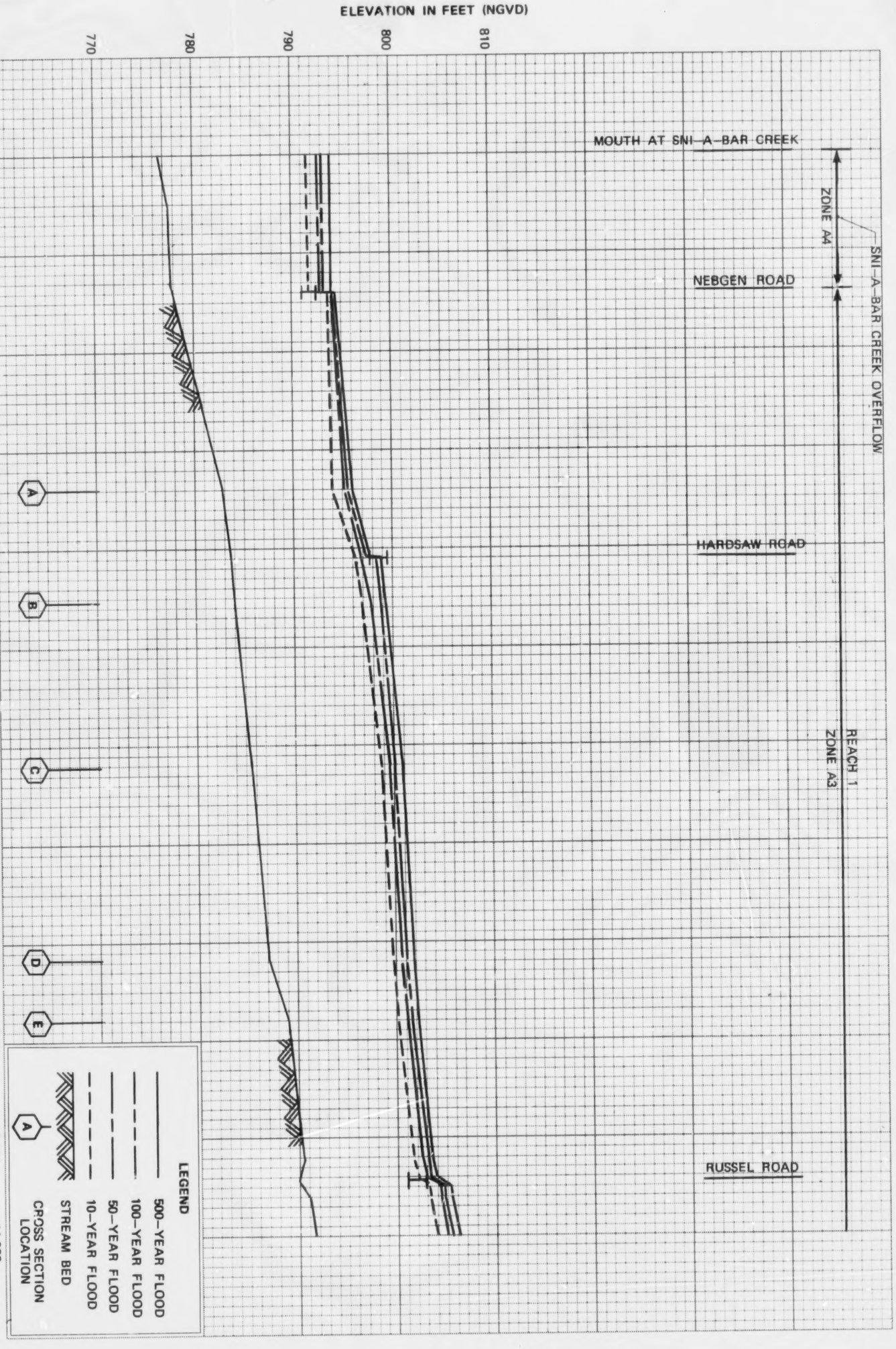
SNI-A-BAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

12P

BEST COPY AVAILABLE



FEDERAL EMERGENCY MANAGEMENT AGENCY

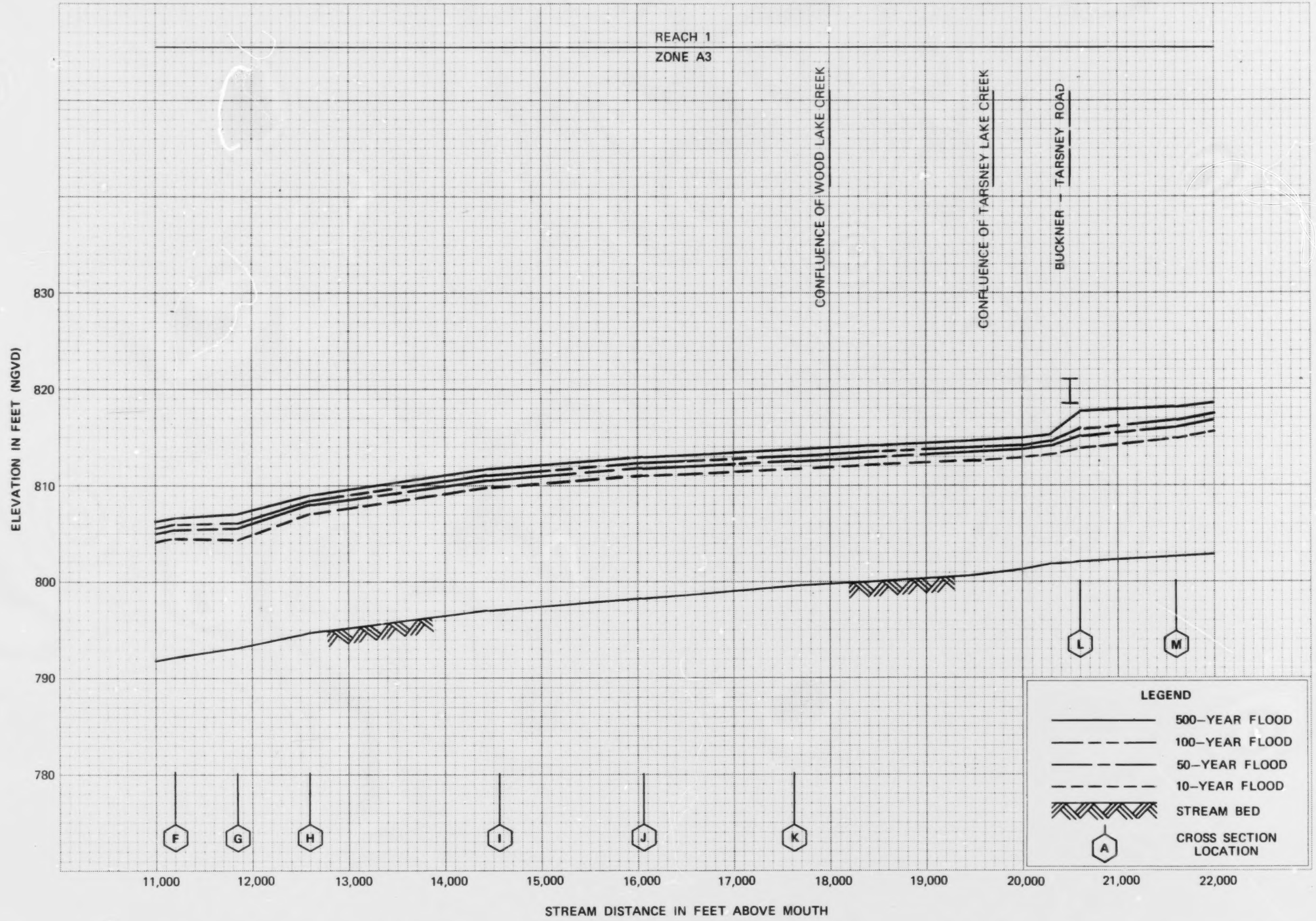
COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

13P

FLOOD PROFILES

WEST FORK SNI-A-BAR CREEK

BEST COPY AVAILABLE



FLOOD PROFILES

WEST FORK SNI-A-BAR CREEK

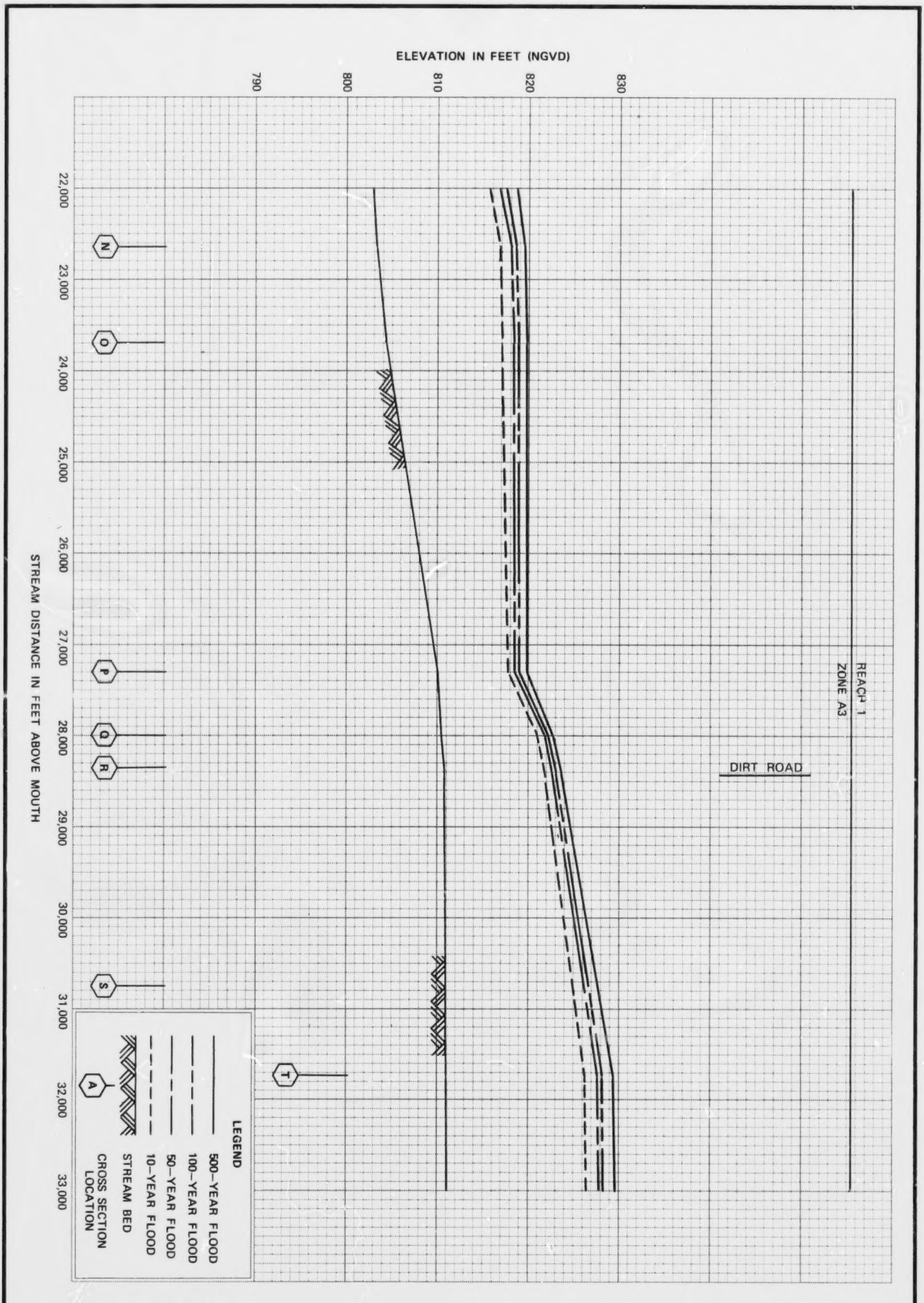
FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

14P

REVISED: 9/4/86

BEST COPY AVAILABLE



15P

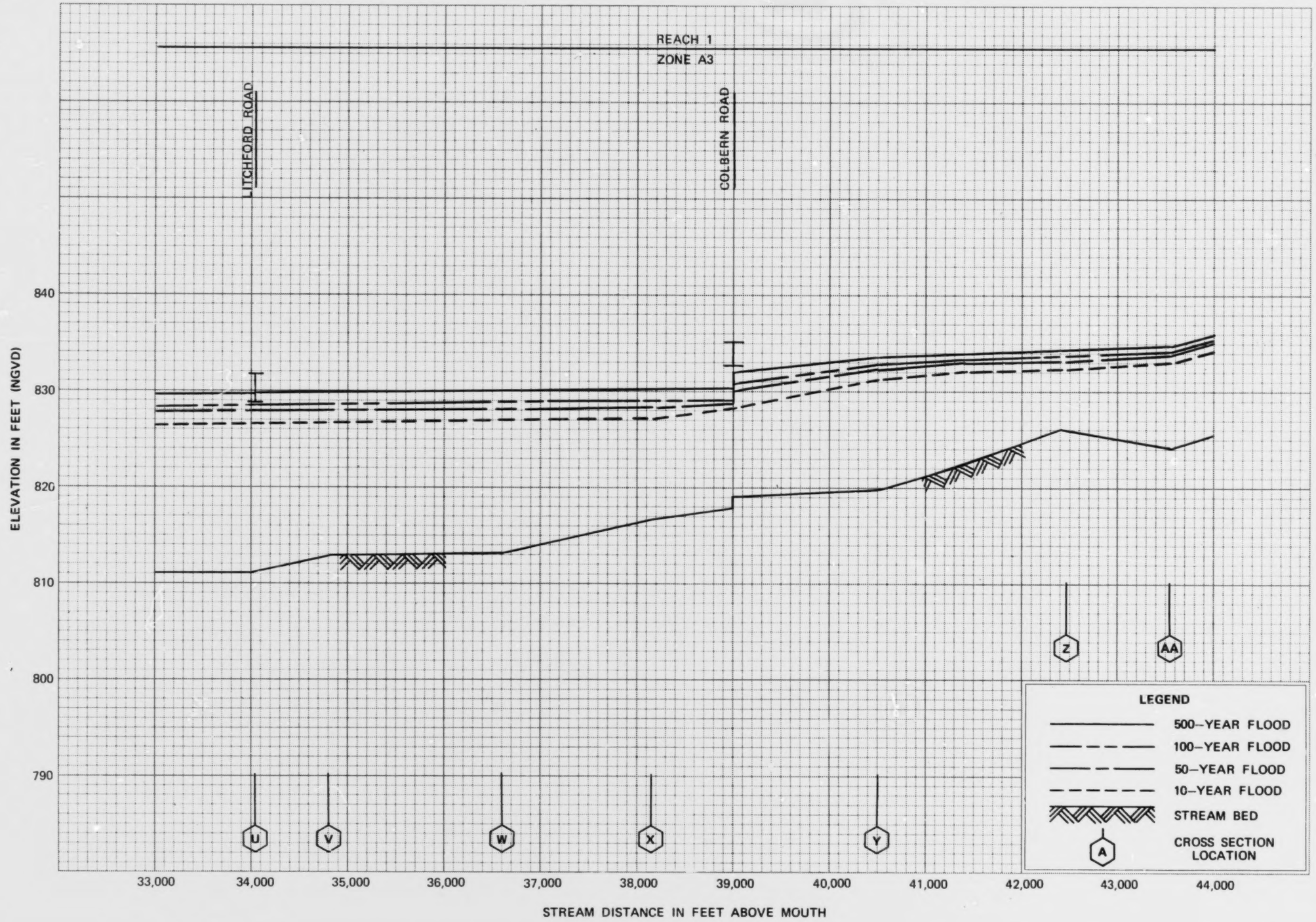
FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOOD PROFILES

WEST FORK SNI-A-BAR CREEK

BEST COPY AVAILABLE



FLOOD PROFILES

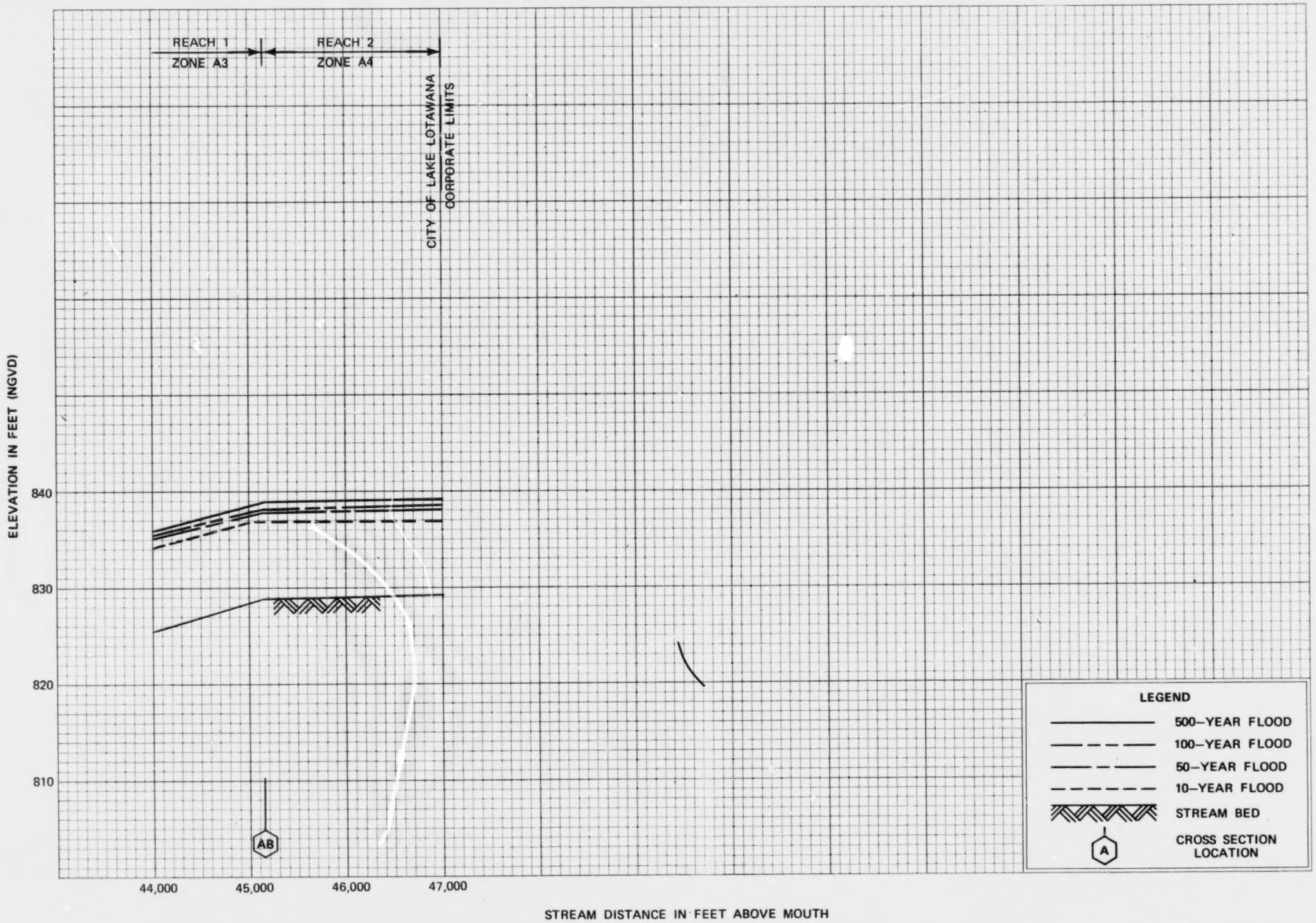
WEST FORK SNI-A-BAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

16P

BEST COPY AVAILABLE



FLOOD PROFILES

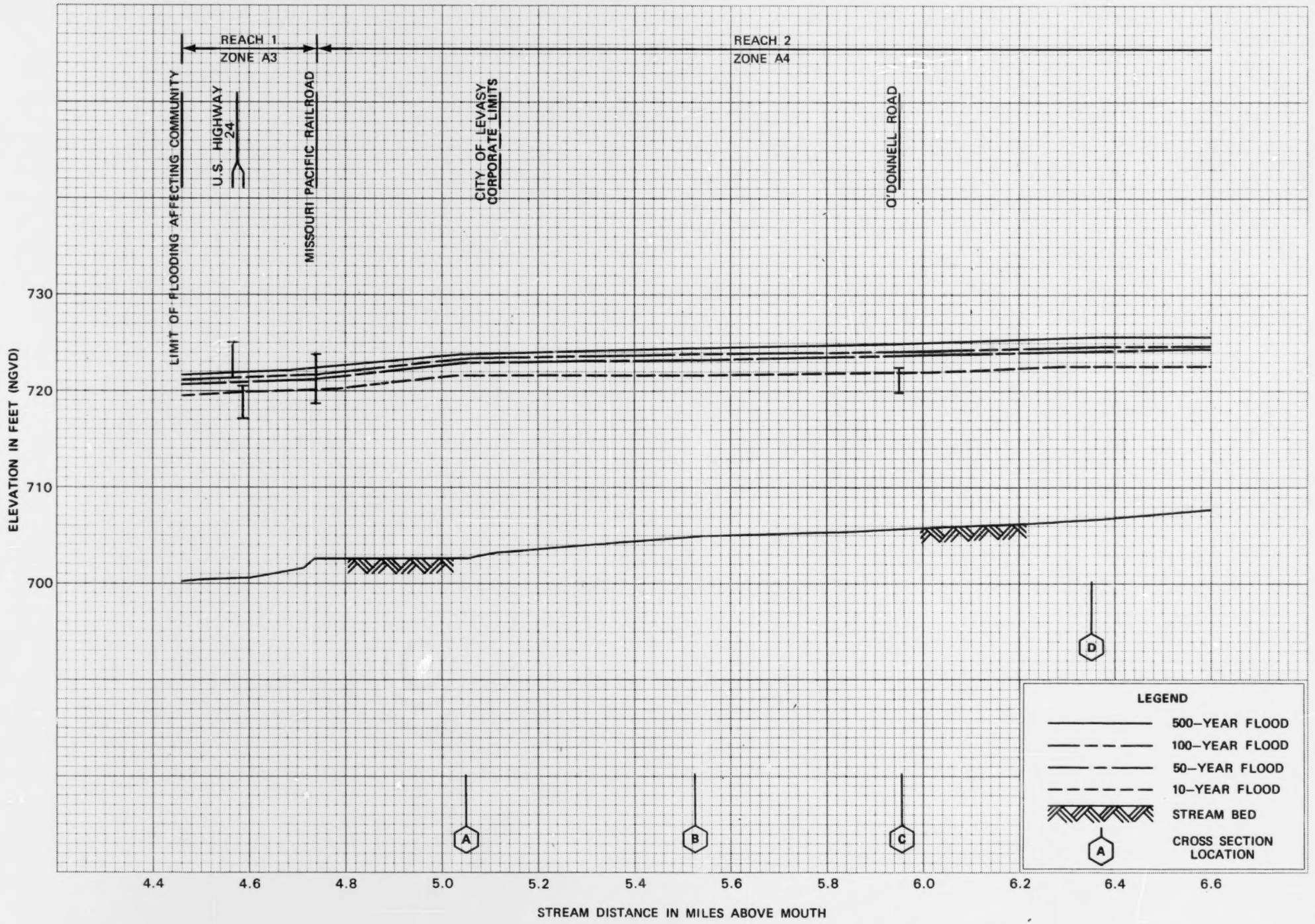
WEST FORK SNI-A-BAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

17P

BEST COPY AVAILABLE



FLOOD PROFILES

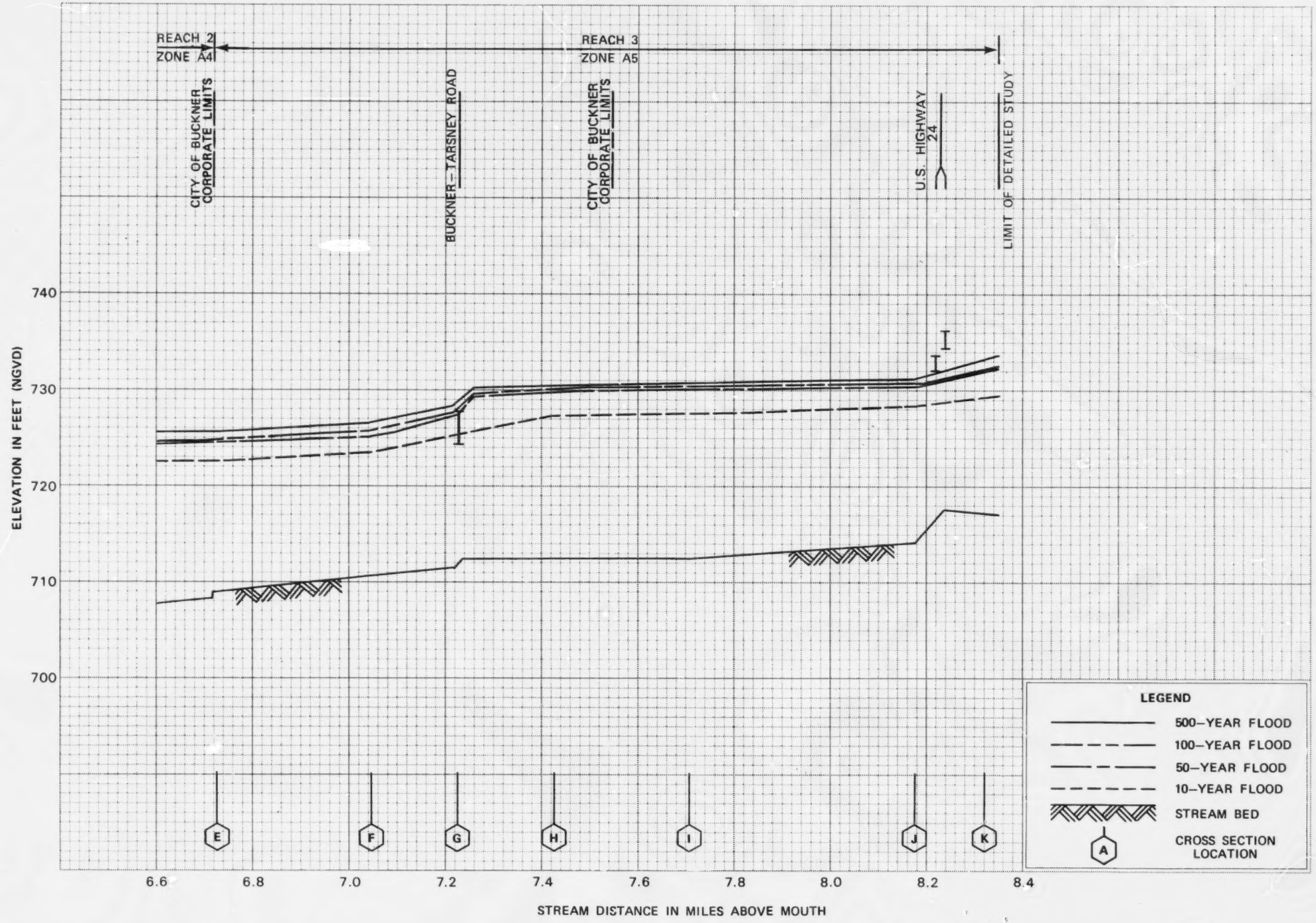
FIRE PRAIRIE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

18P

BEST COPY AVAILABLE



FLOOD PROFILES

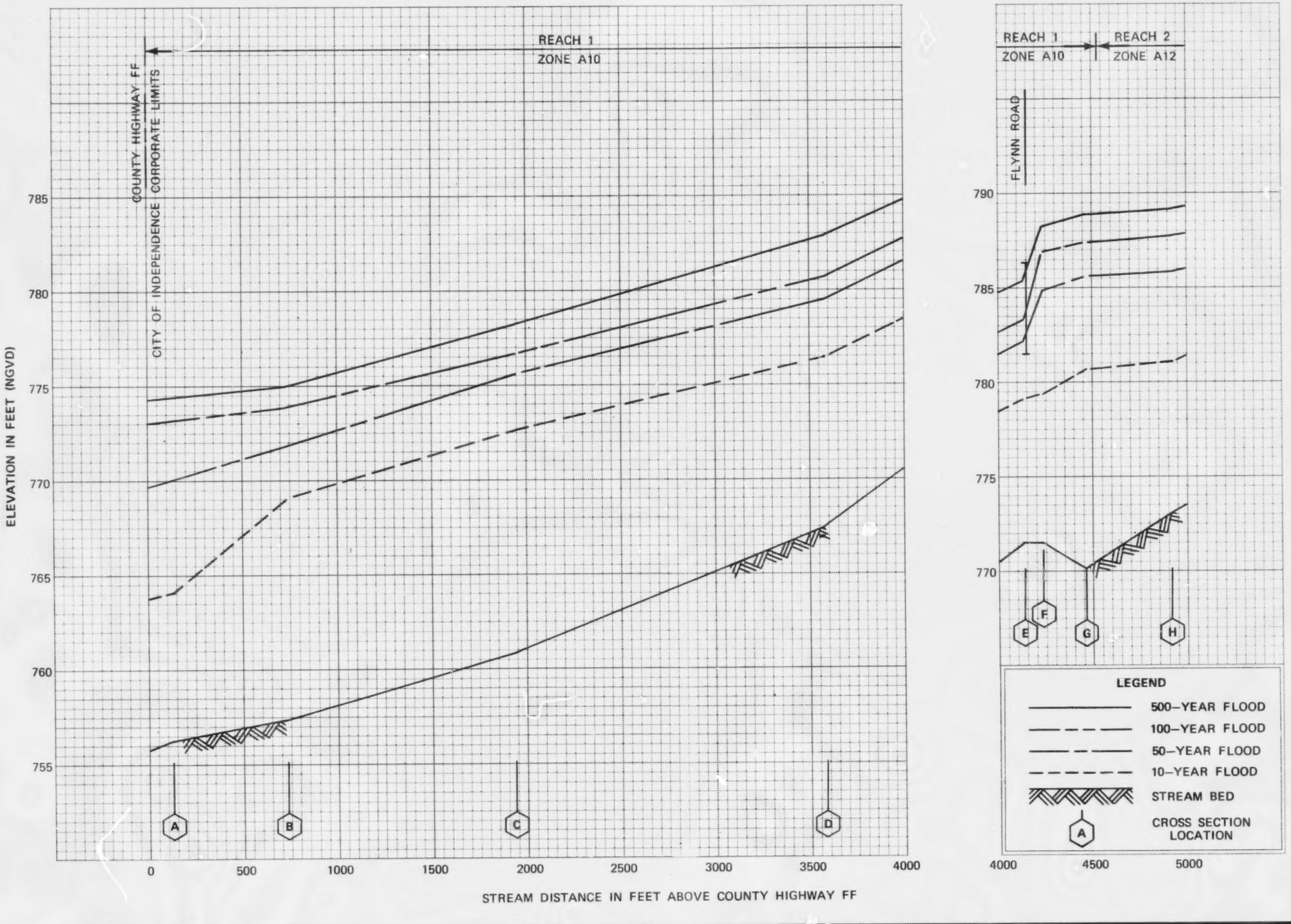
FIRE PRAIRIE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

19P

BEST COPY AVAILABLE



FLOOD PROFILES

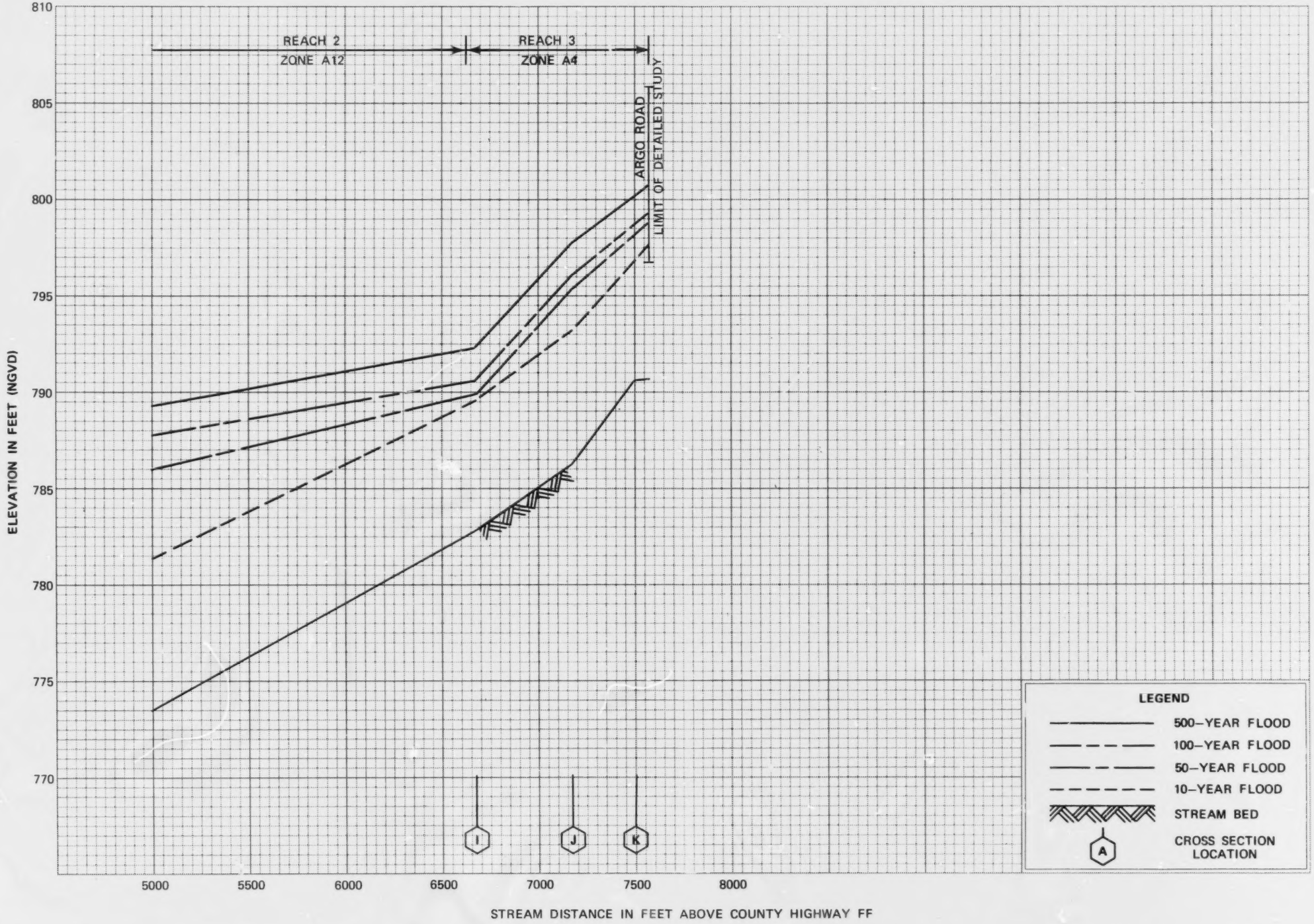
WEST FIRE PRAIRIE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

20P

BEST COPY AVAILABLE



FLOOD PROFILES

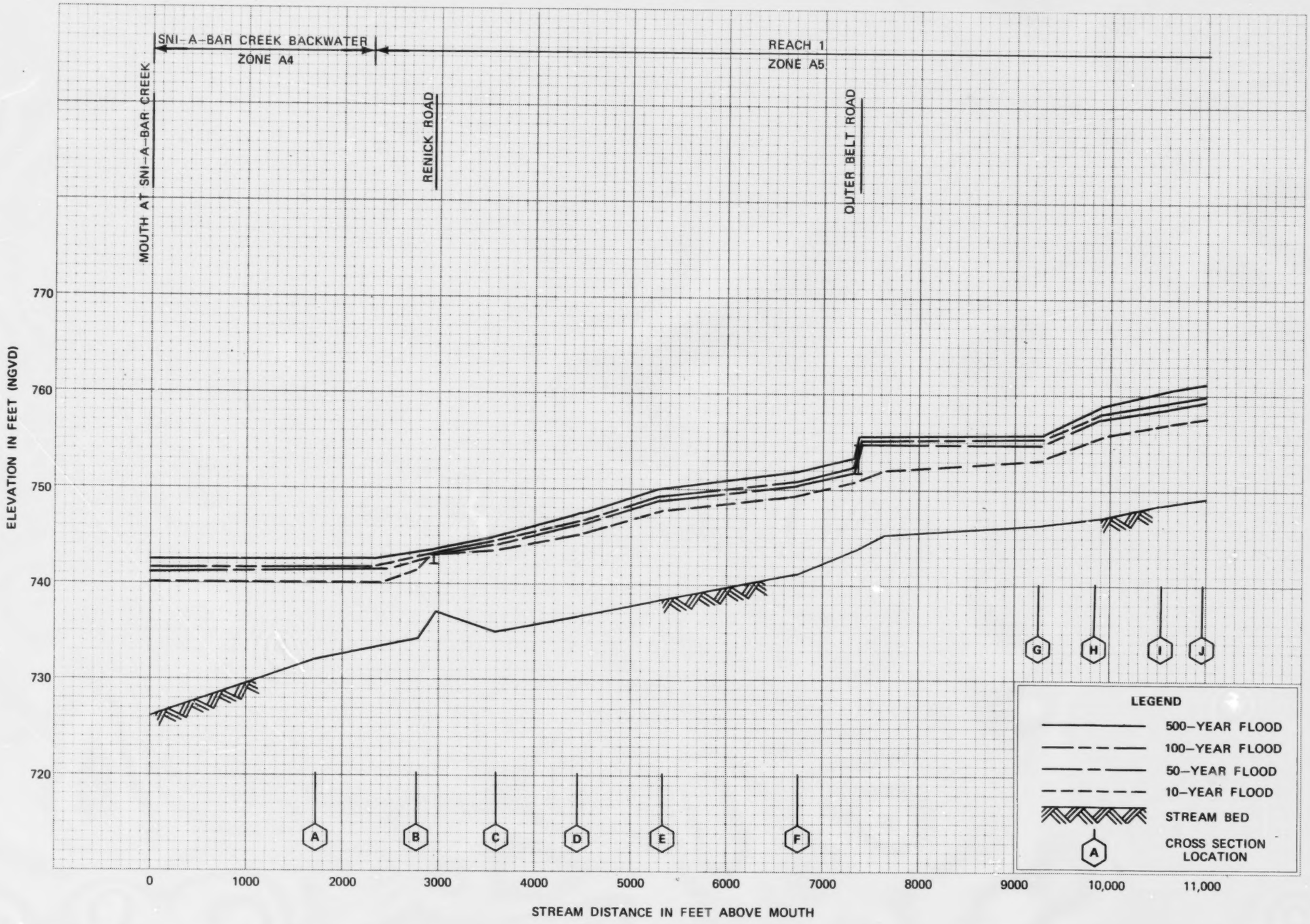
WEST FIRE PRAIRIE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

21P

BEST COPY AVAILABLE



FLOOD PROFILES

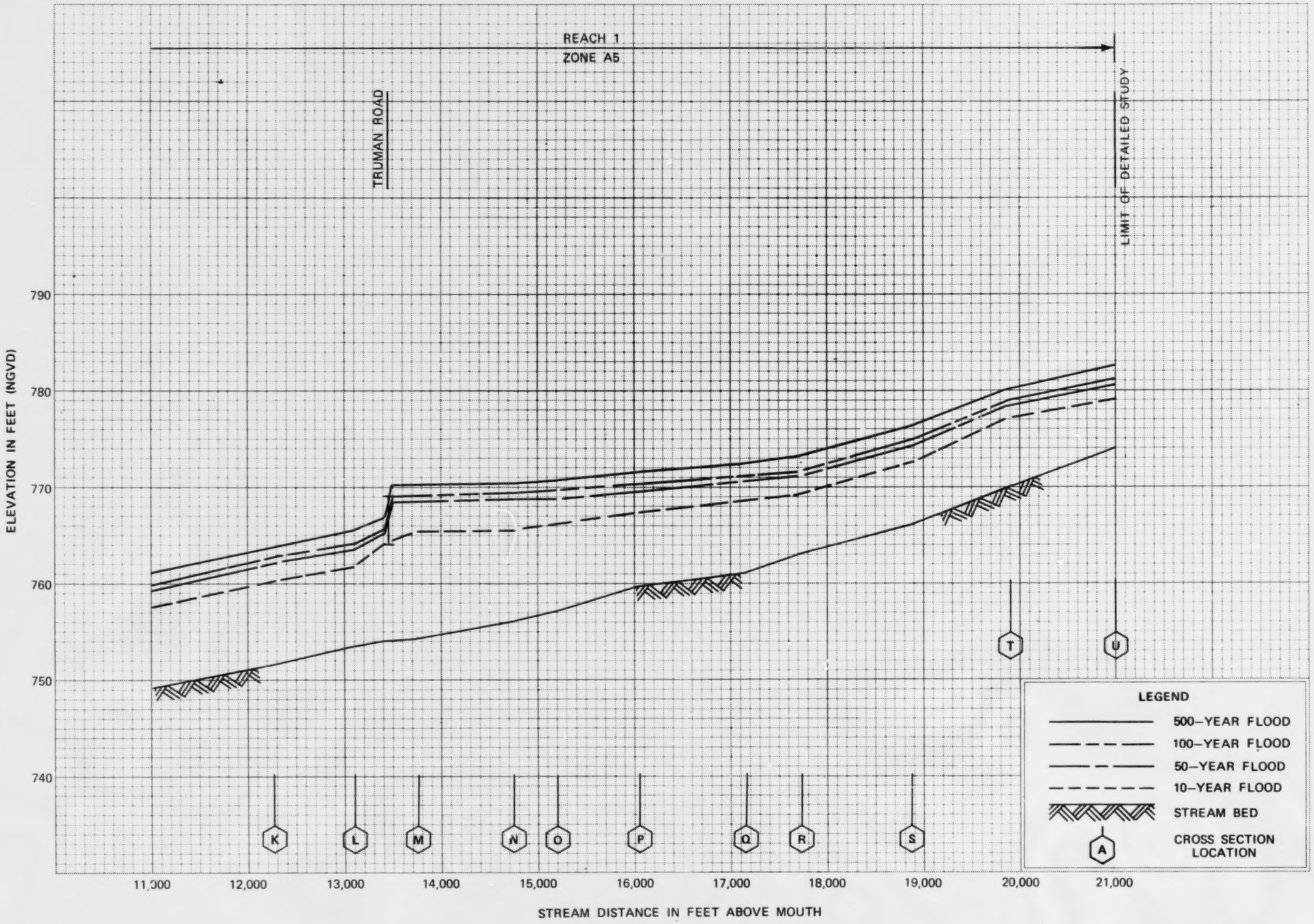
SEMINARY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

22P

BEST COPY AVAILABLE



FLOOD PROFILES

SEMINARY CREEK

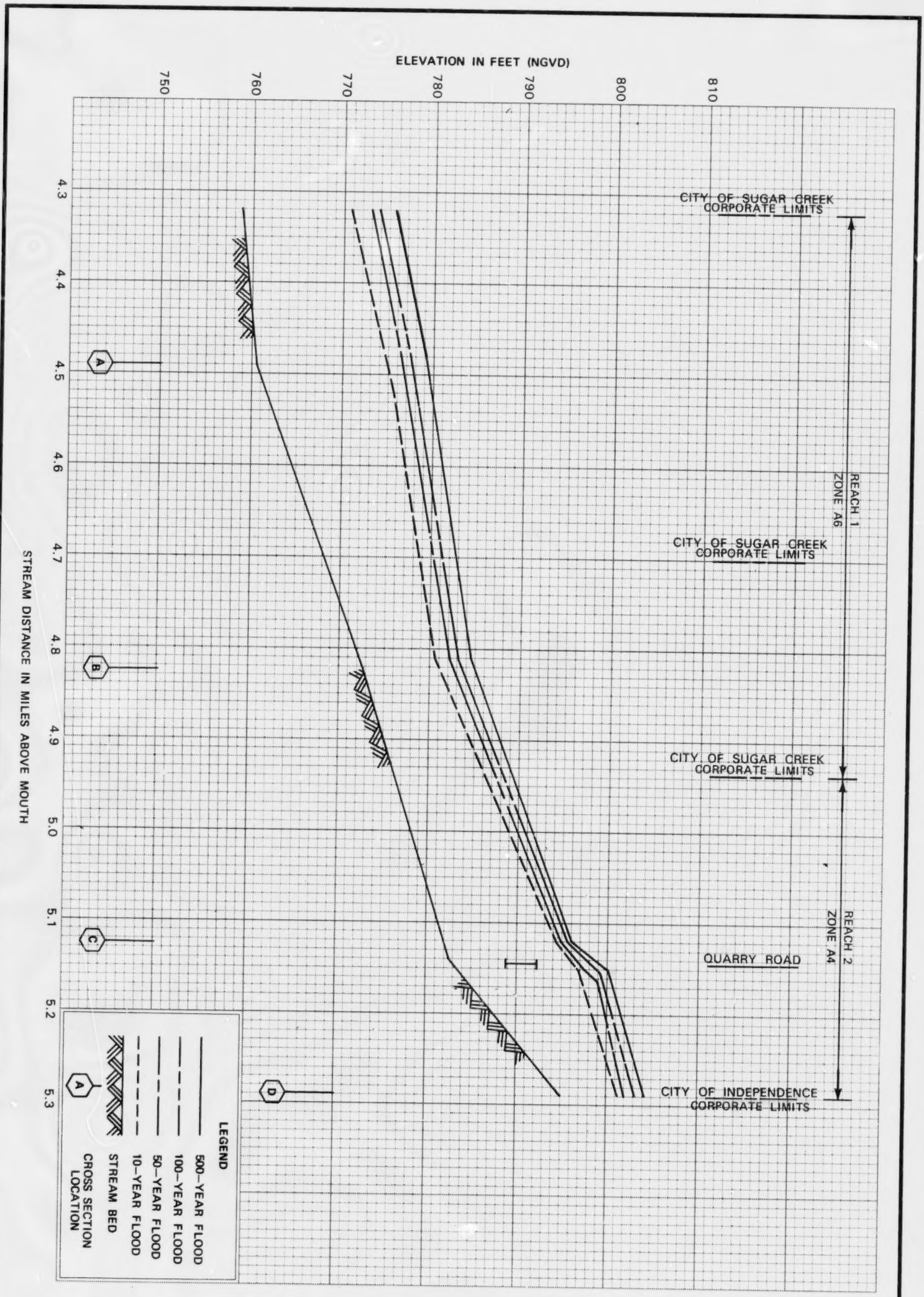
FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO

(UNINCORPORATED AREAS)

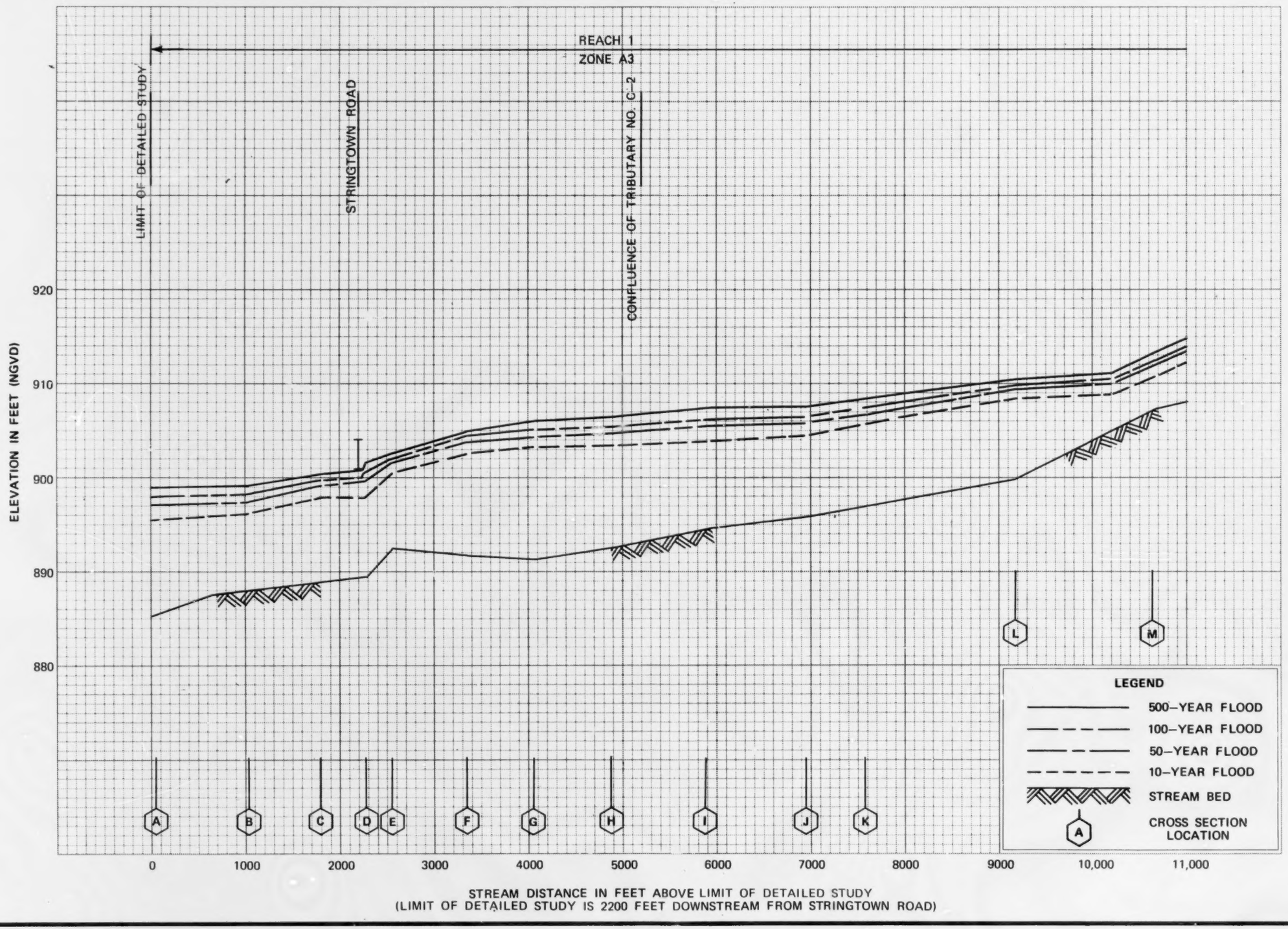
23P

BEST COPY AVAILABLE



24P	FEDERAL EMERGENCY MANAGEMENT AGENCY **COUNTY OF JACKSON, MO** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **MILL CREEK**

BEST COPY AVAILABLE



FLOOD PROFILES

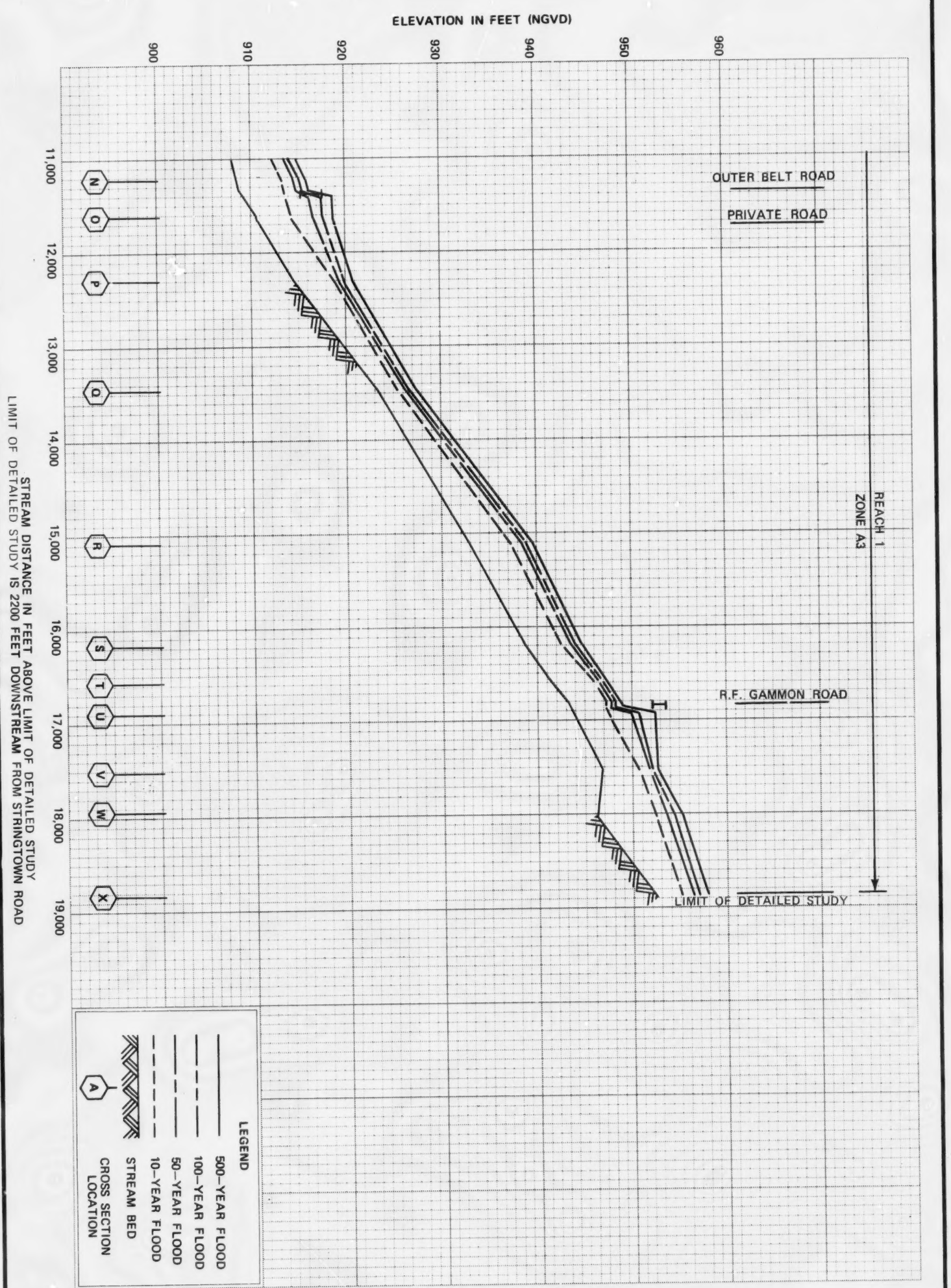
WEST BRANCH CRAWFORD CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

25P

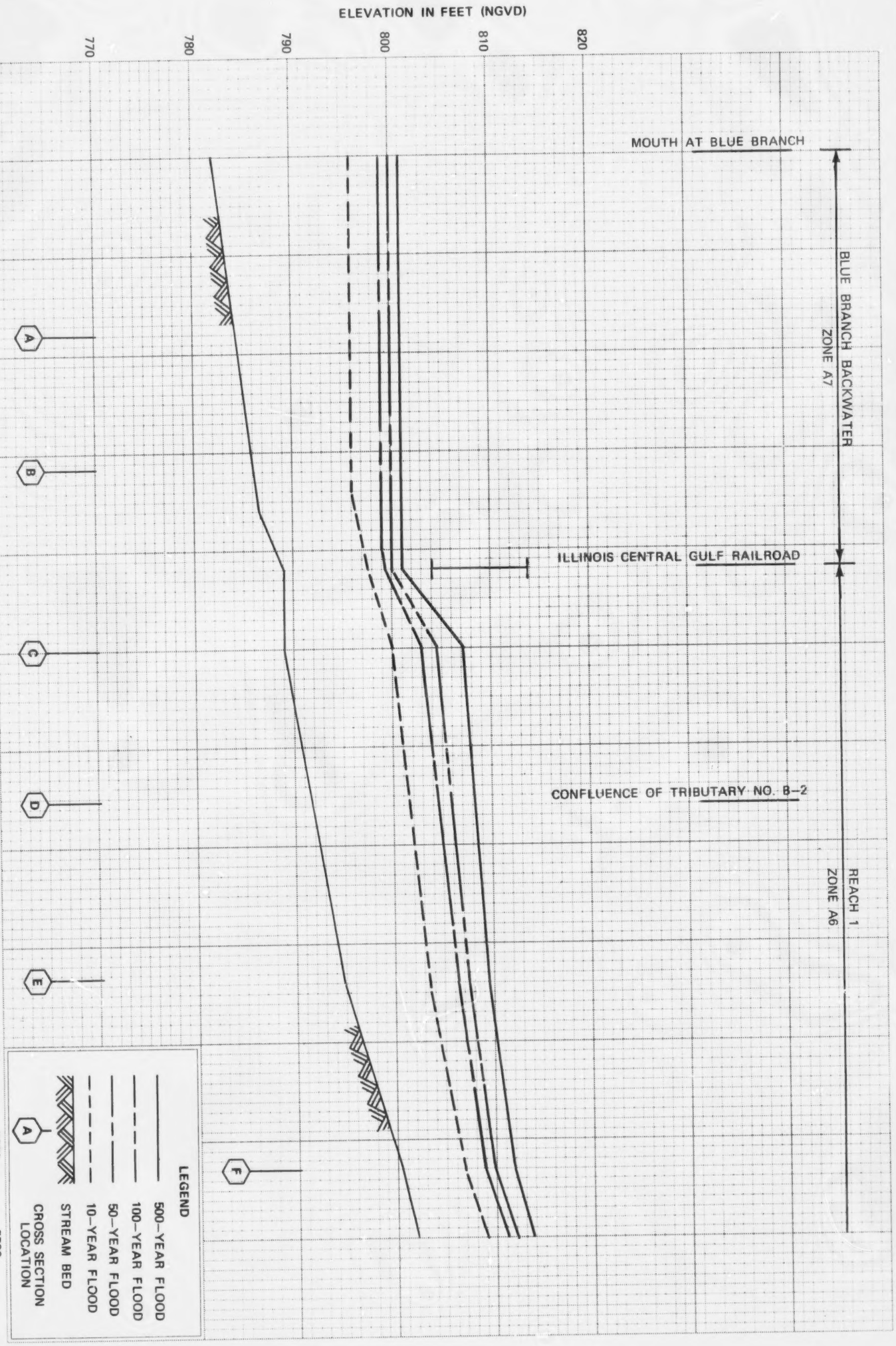
BEST COPY AVAILABLE



26P	FEDERAL EMERGENCY MANAGEMENT AGENCY **COUNTY OF JACKSON, MO** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **WEST BRANCH CRAWFORD CREEK**

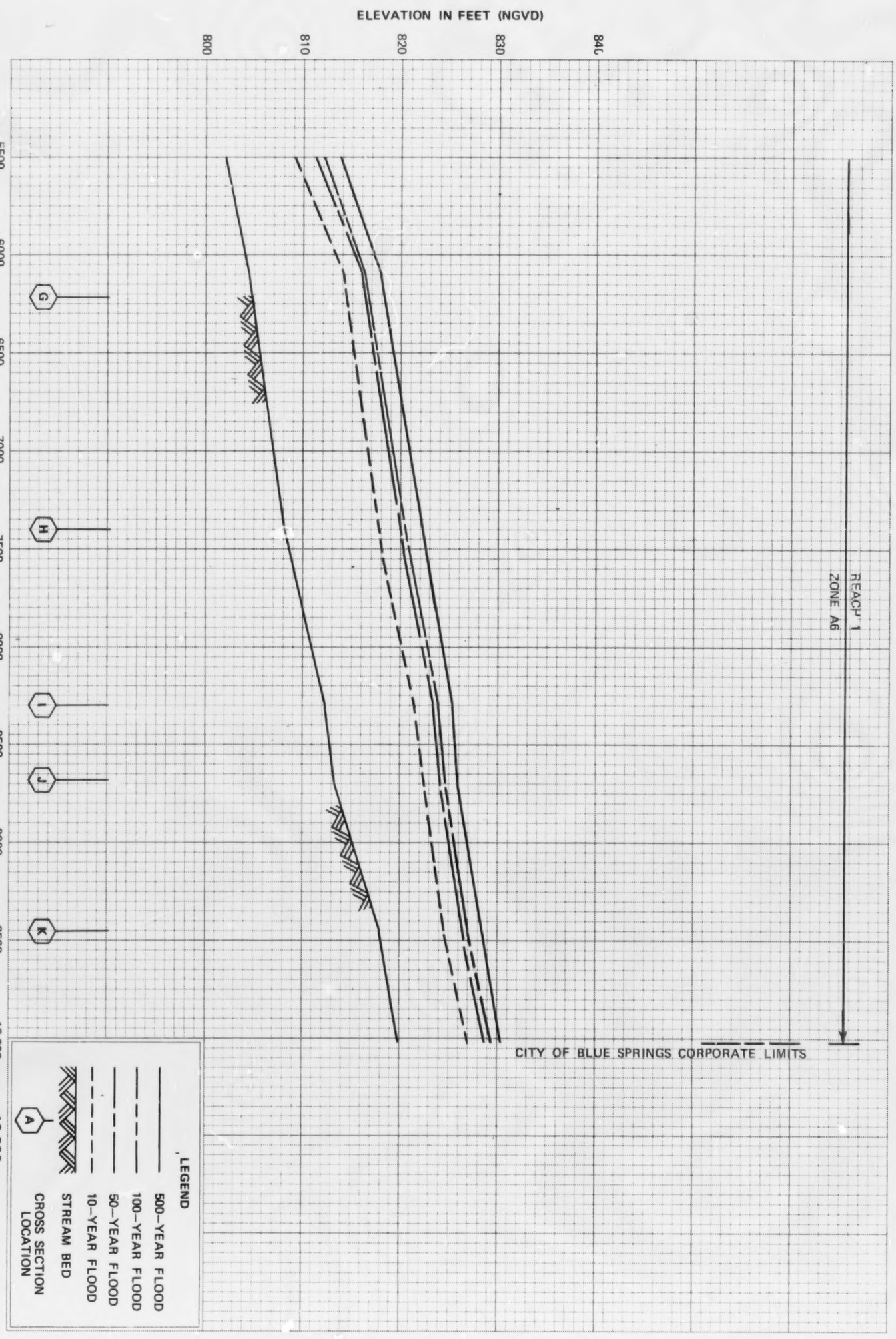
79

BEST COPY AVAILABLE



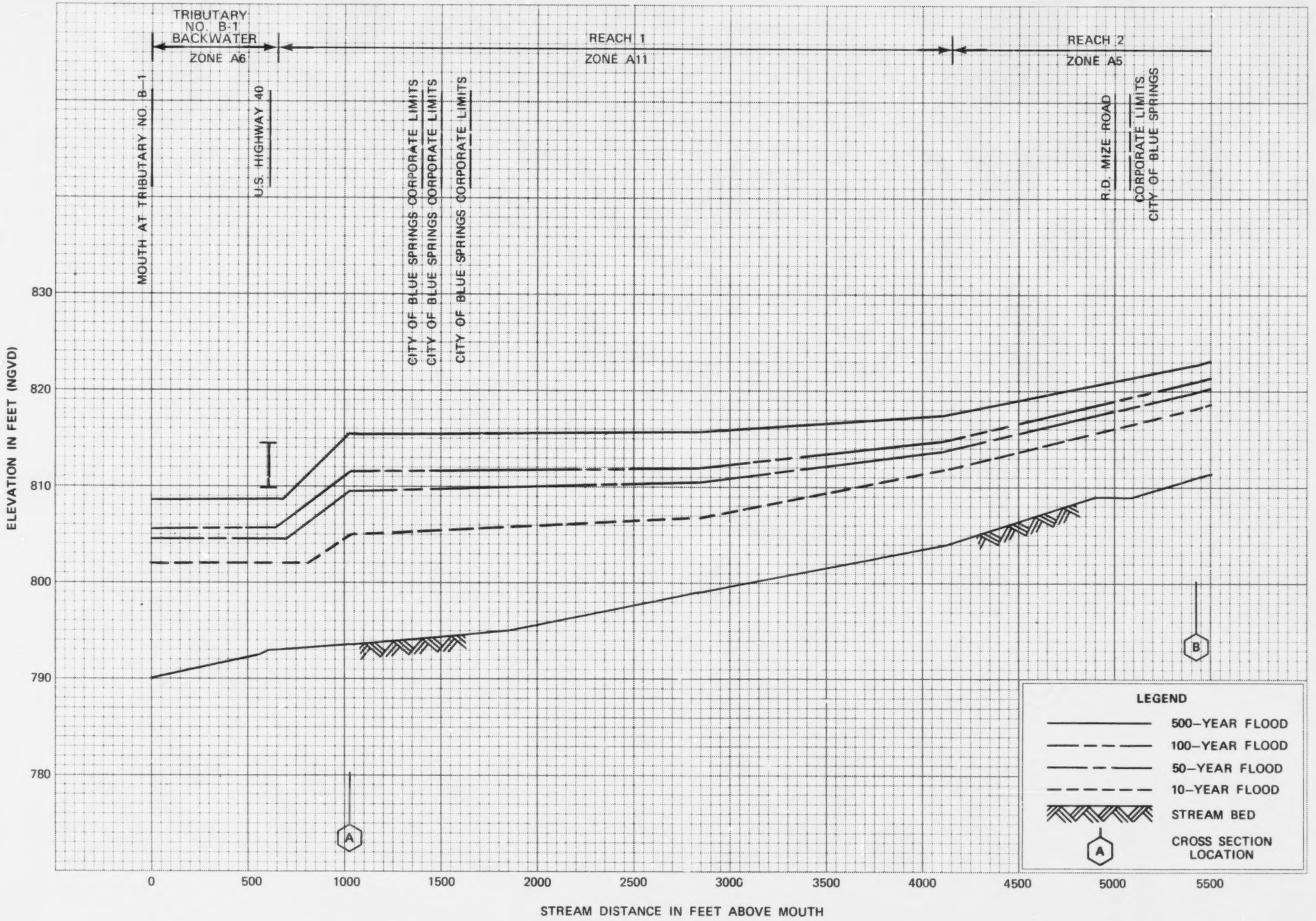
BEST COPY AVAILABLE

27P	FEDERAL EMERGENCY MANAGEMENT AGENCY COUNTY OF JACKSON, MO (UNINCORPORATED AREAS)	FLOOD PROFILES TRIBUTARY NO. B-1



BEST COPY AVAILABLE

28P	FEDERAL EMERGENCY MANAGEMENT AGENCY **COUNTY OF JACKSON, MO** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **TRIBUTARY NO. B-1**



FLOOD PROFILES

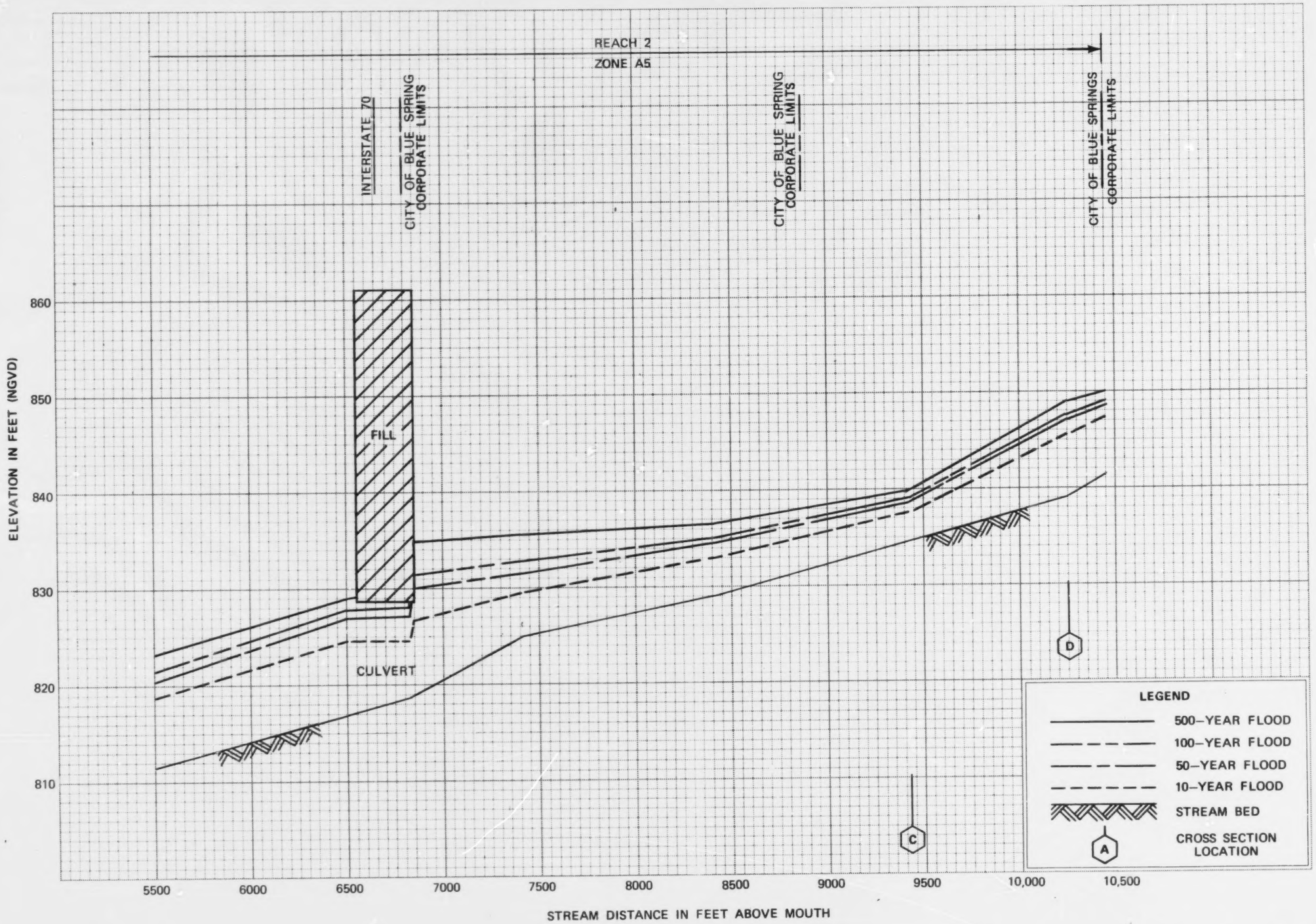
TRIBUTARY NO. B-2

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

29P

BEST COPY AVAILABLE



FLOOD PROFILES

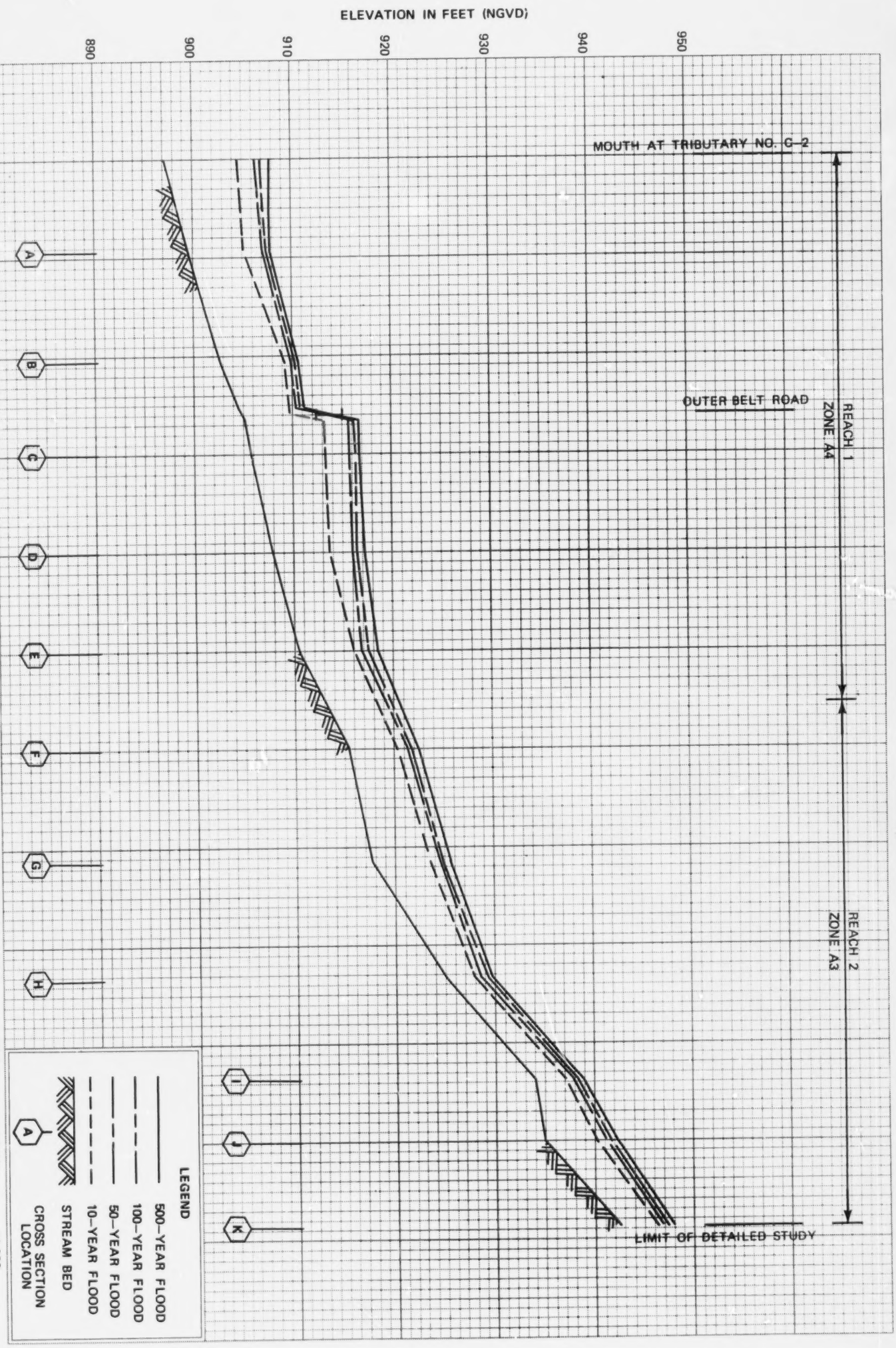
TRIBUTARY NO. B-2

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

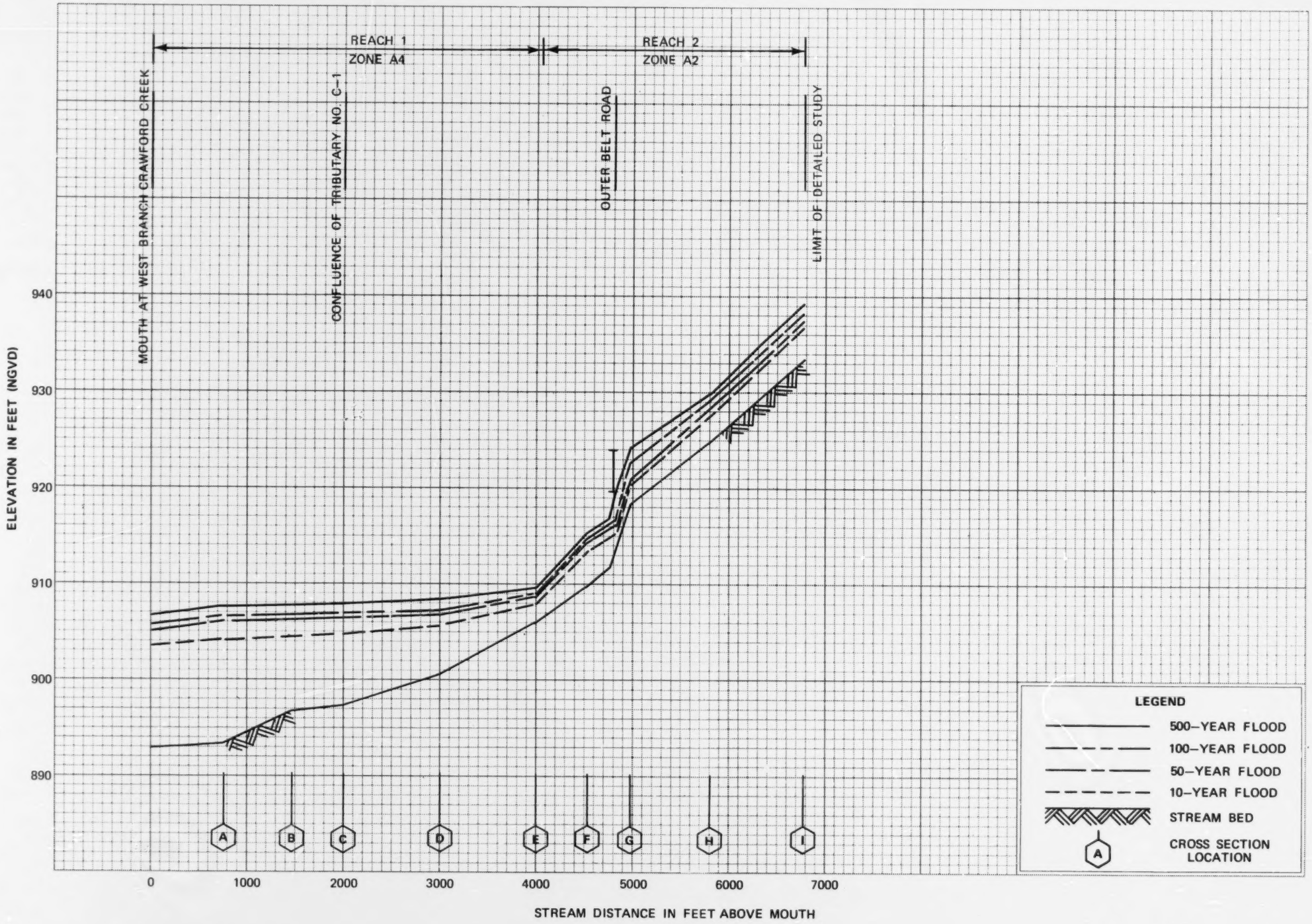
30P

BEST COPY AVAILABLE



31P	FEDERAL EMERGENCY MANAGEMENT AGENCY **COUNTY OF JACKSON, MO** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **TRIBUTARY NO. C-1**

BEST COPY AVAILABLE



FLOOD PROFILES

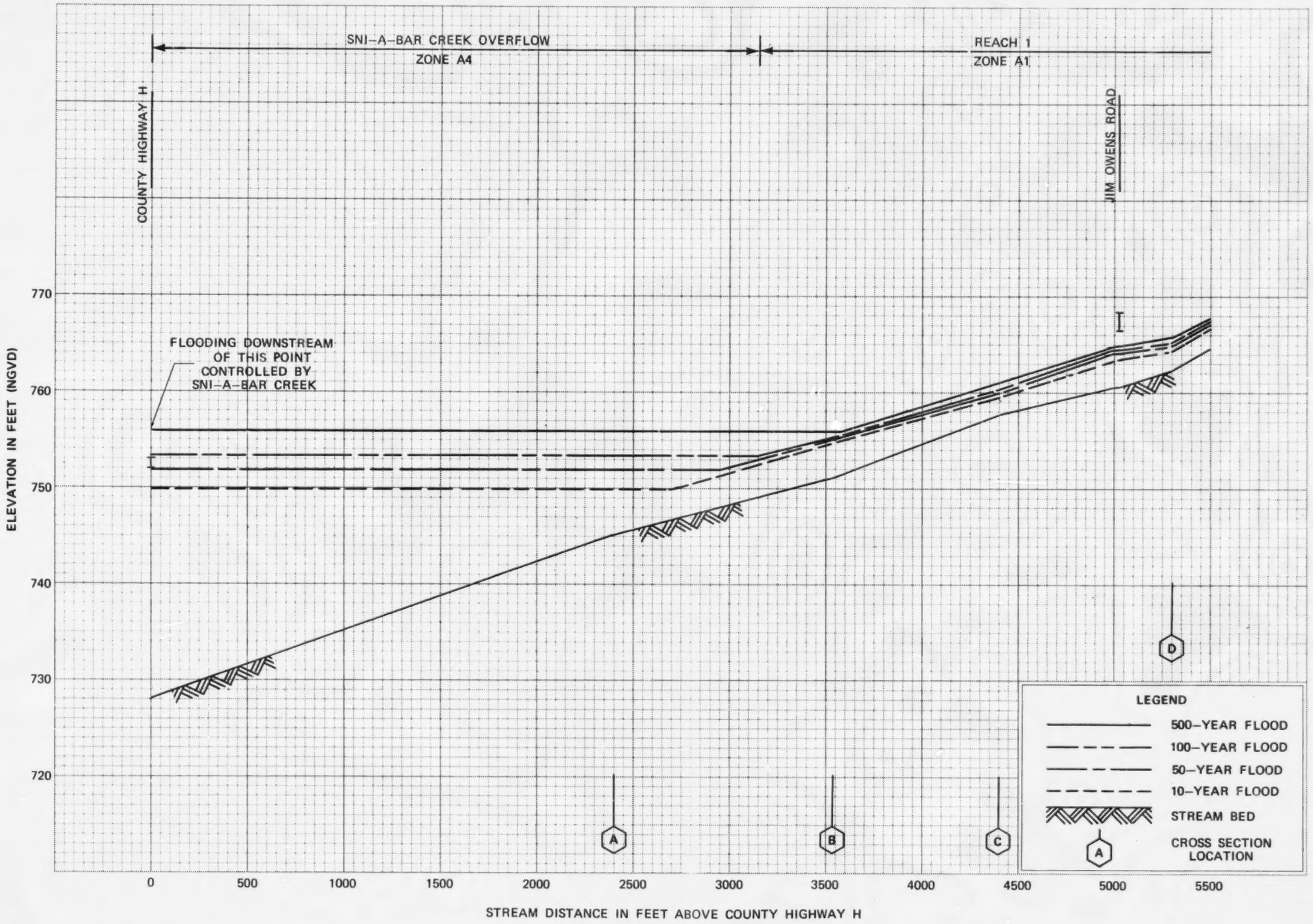
TRIBUTARY NO. C-2

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

32P

BEST COPY AVAILABLE



FLOOD PROFILES

TRIBUTARY NO. S-1

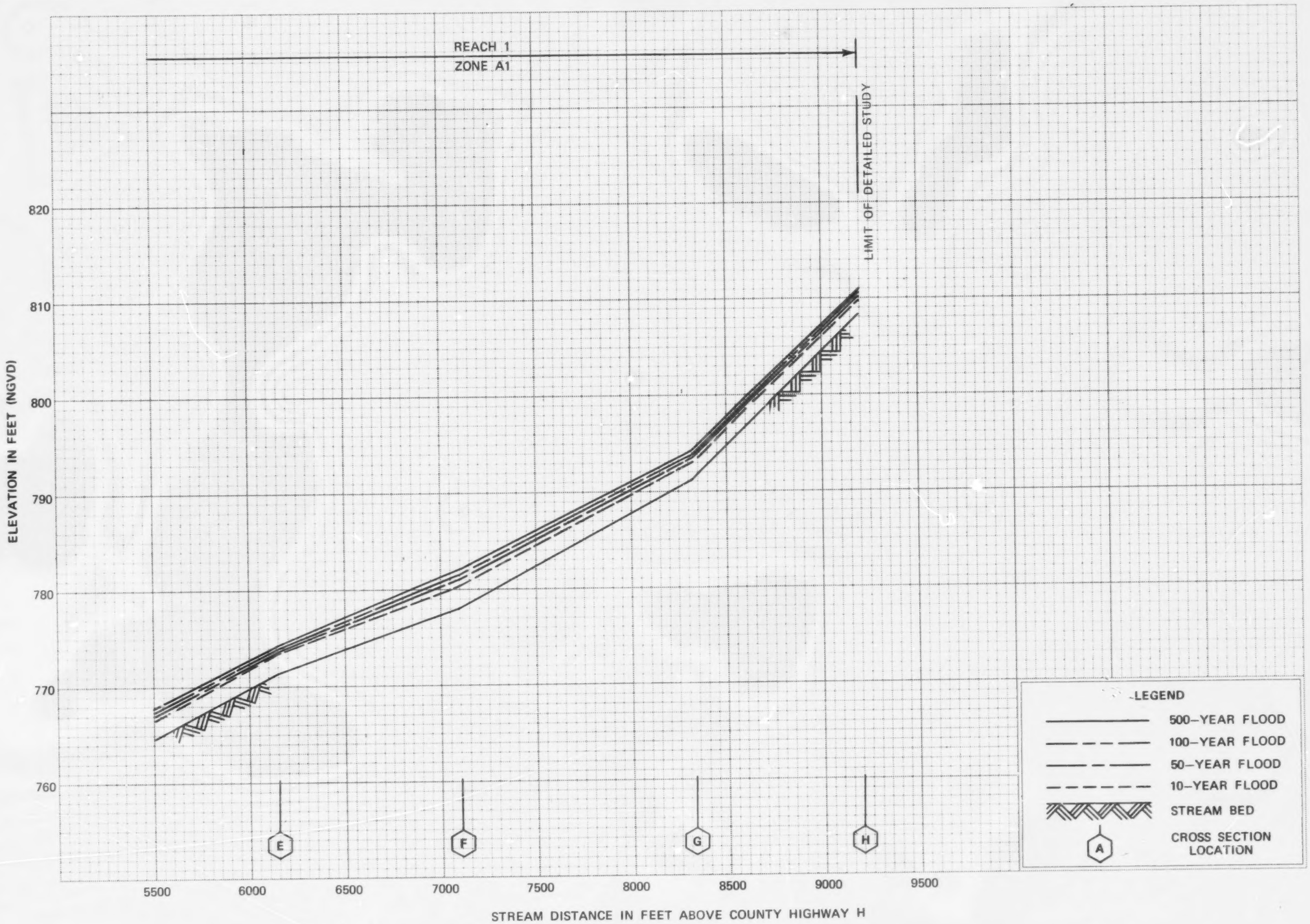
FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO

(UNINCORPORATED AREAS)

33P

BEST COPY AVAILABLE



FLOOD PROFILES

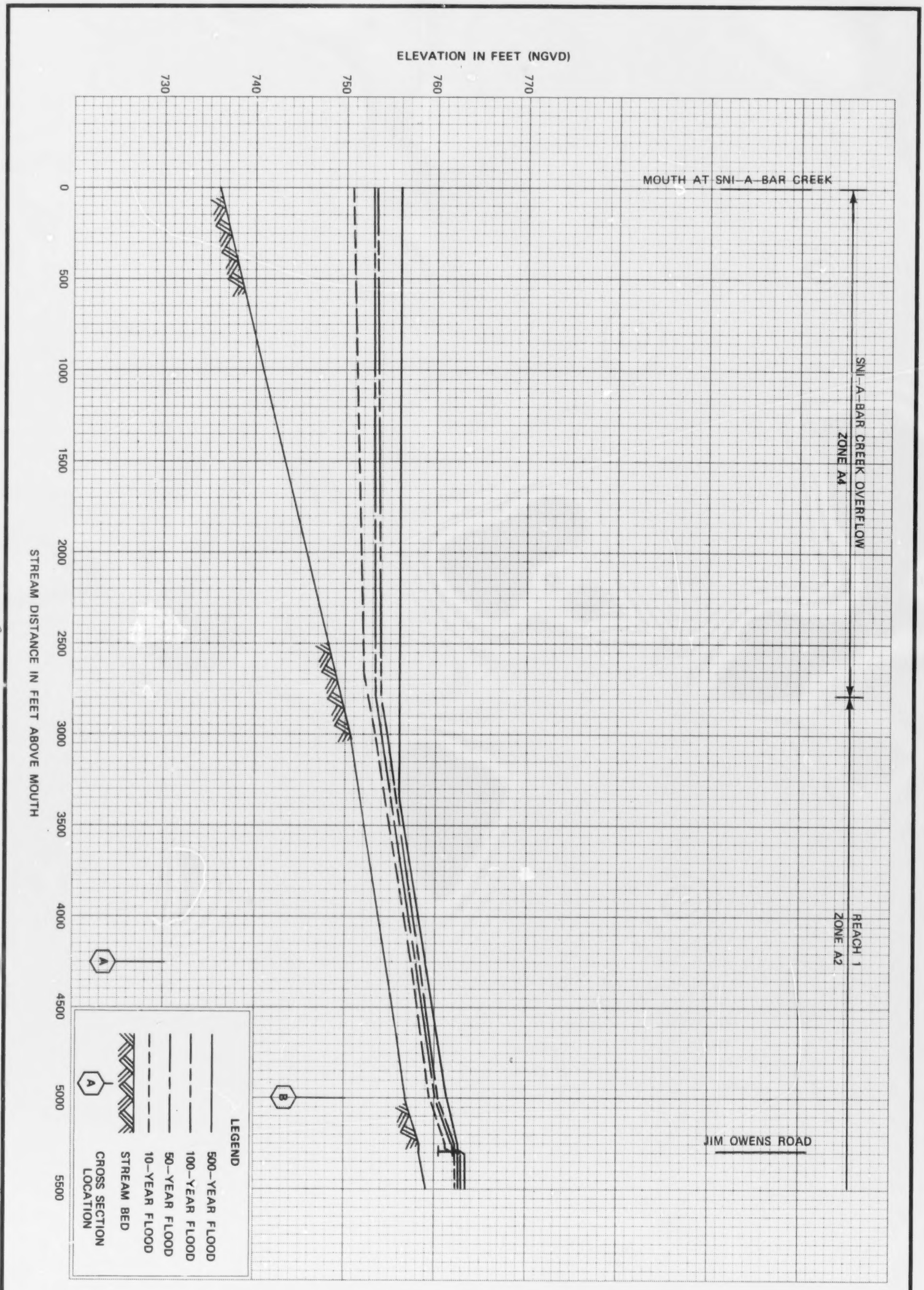
TRIBUTARY NO. S-1

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

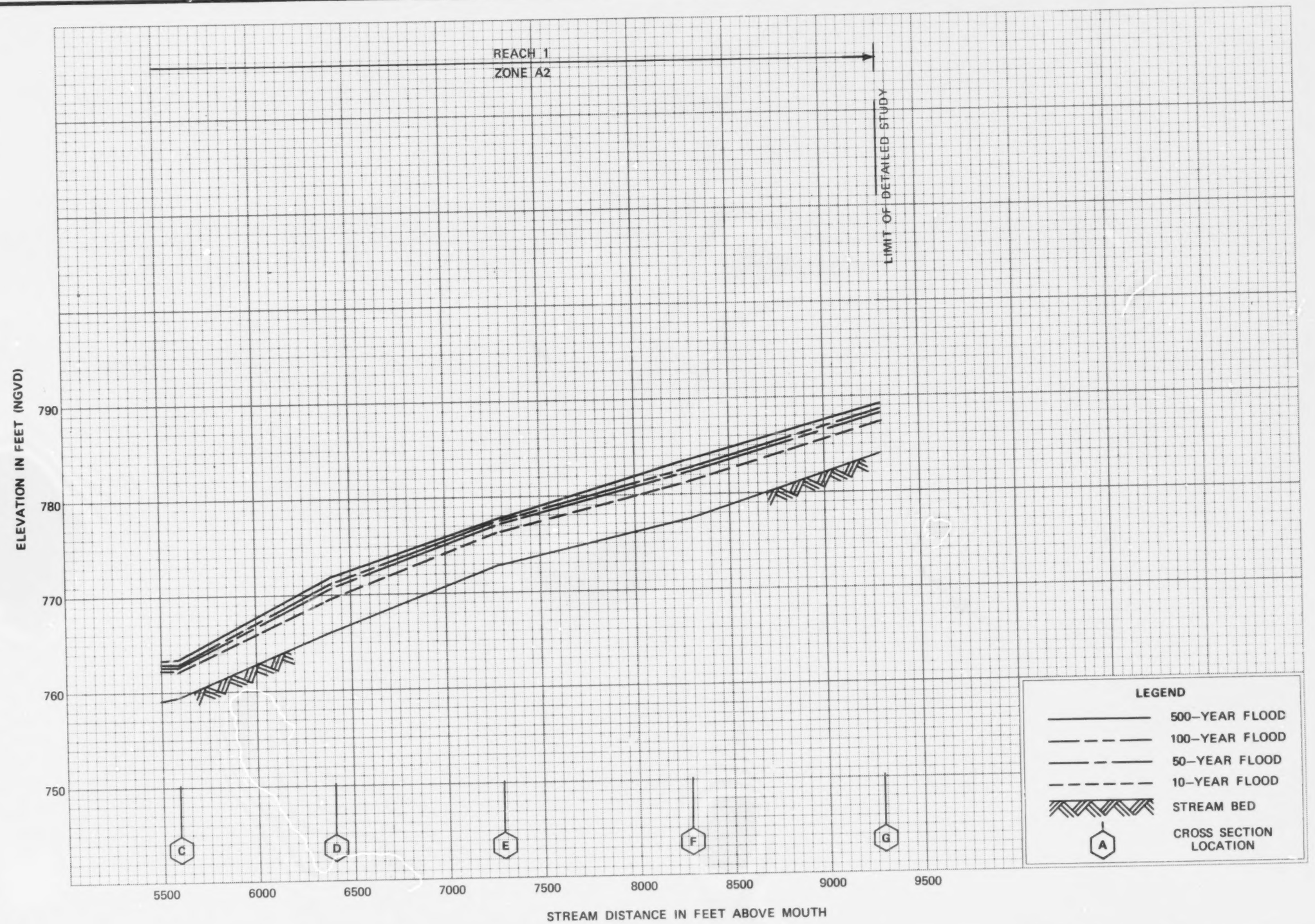
34P

BEST COPY AVAILABLE



35P	FEDERAL EMERGENCY MANAGEMENT AGENCY **COUNTY OF JACKSON, MO** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **TRIBUTARY NO. S-2**

BEST COPY AVAILABLE



FLOOD PROFILES

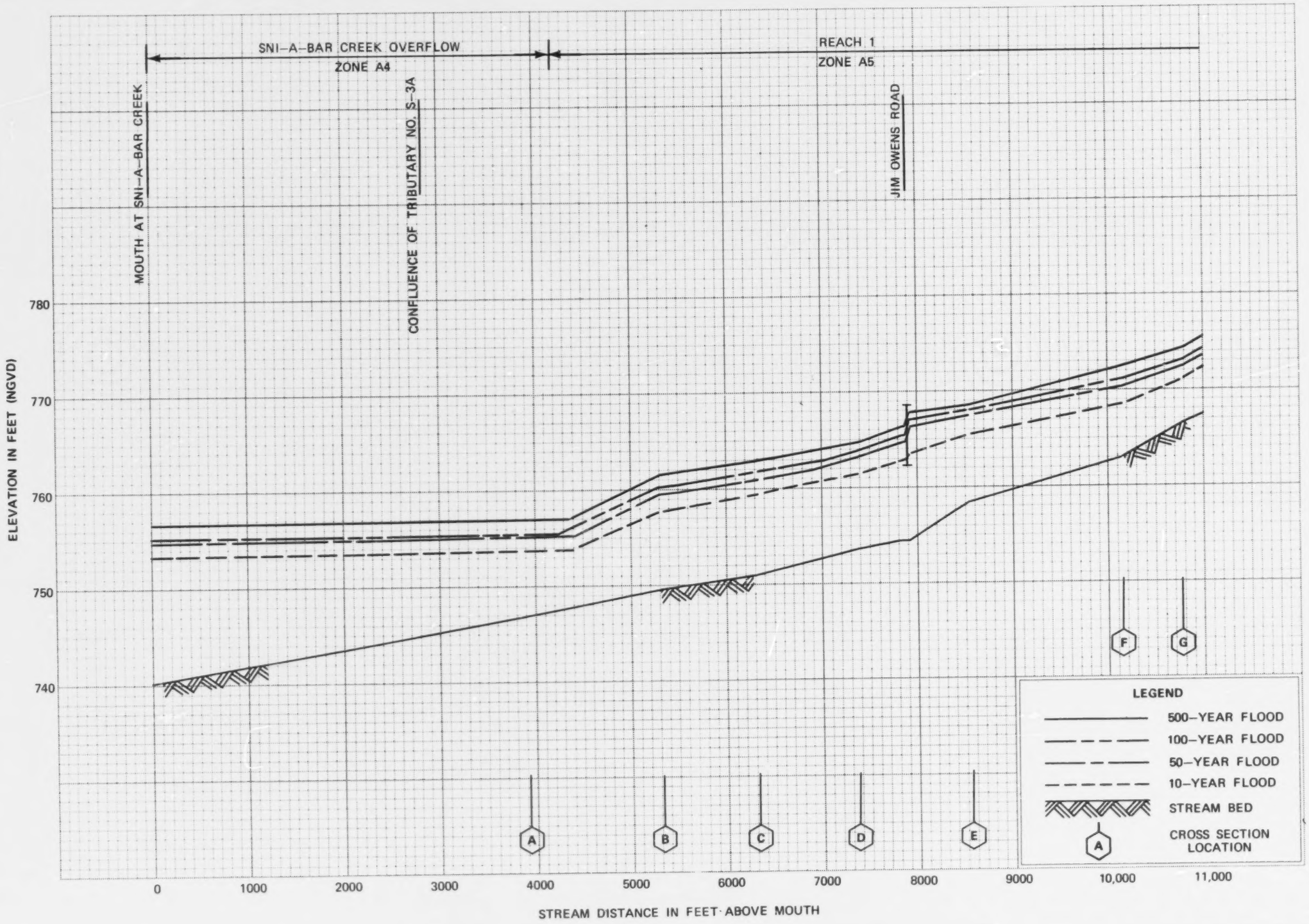
TRIBUTARY NO. S-2

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

36P

BEST COPY AVAILABLE



FLOOD PROFILES

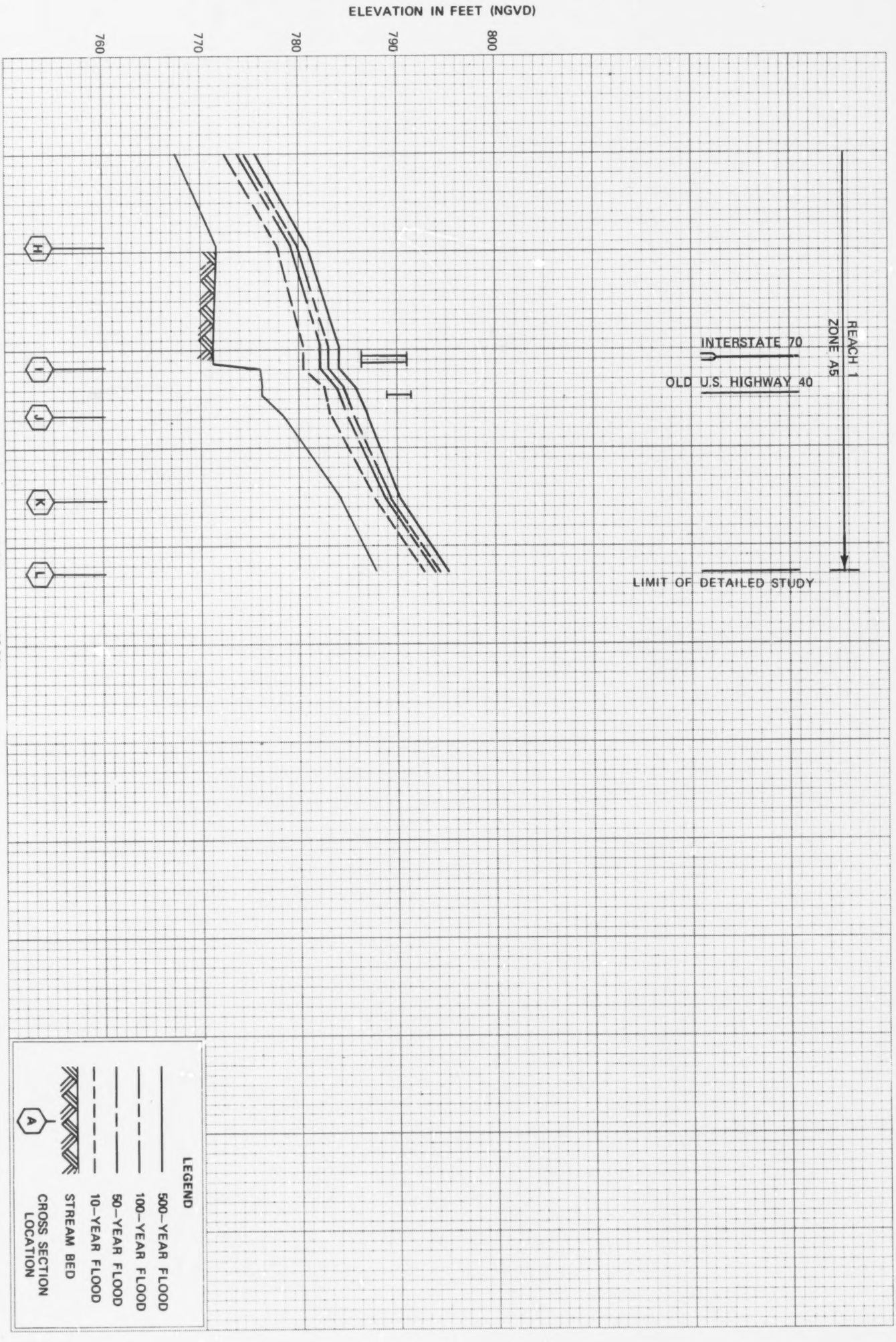
TRIBUTARY NO. S-3

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

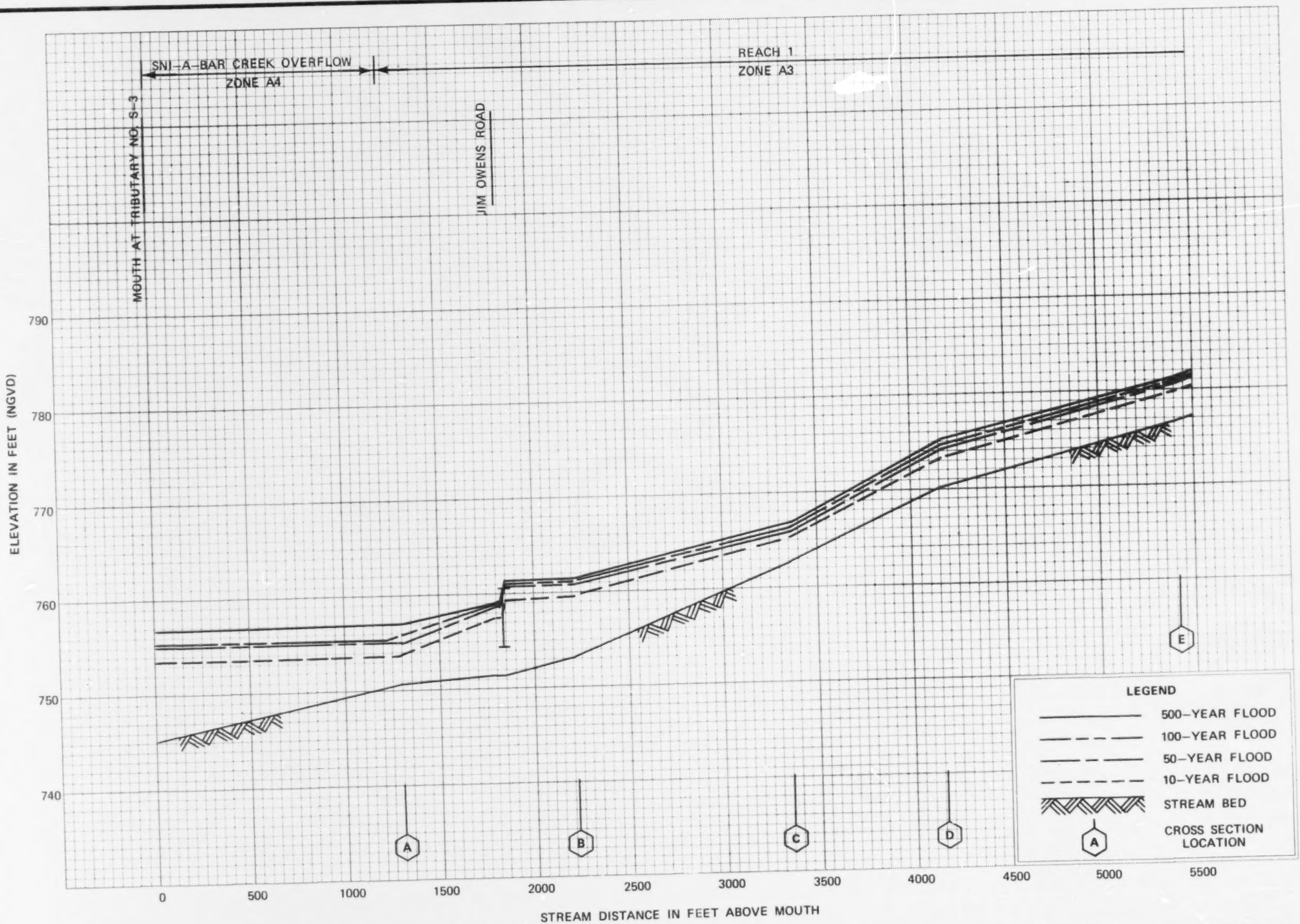
37P

BEST COPY AVAILABLE



38P	FEDERAL EMERGENCY MANAGEMENT AGENCY **COUNTY OF JACKSON, MO** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **TRIBUTARY NO. S-3**

BEST COPY AVAILABLE



FLOOD PROFILES

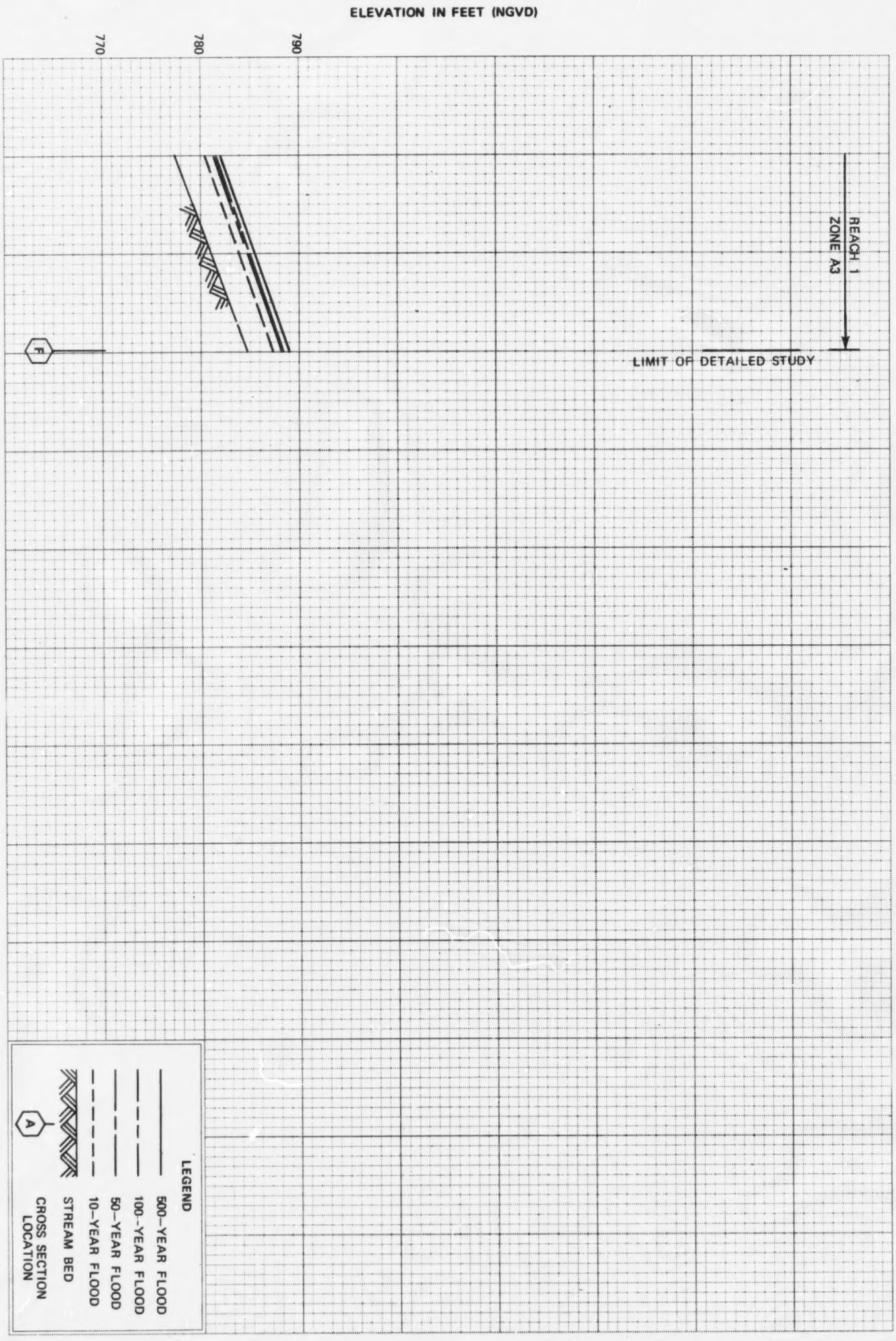
TRIBUTARY NO. S-3A

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

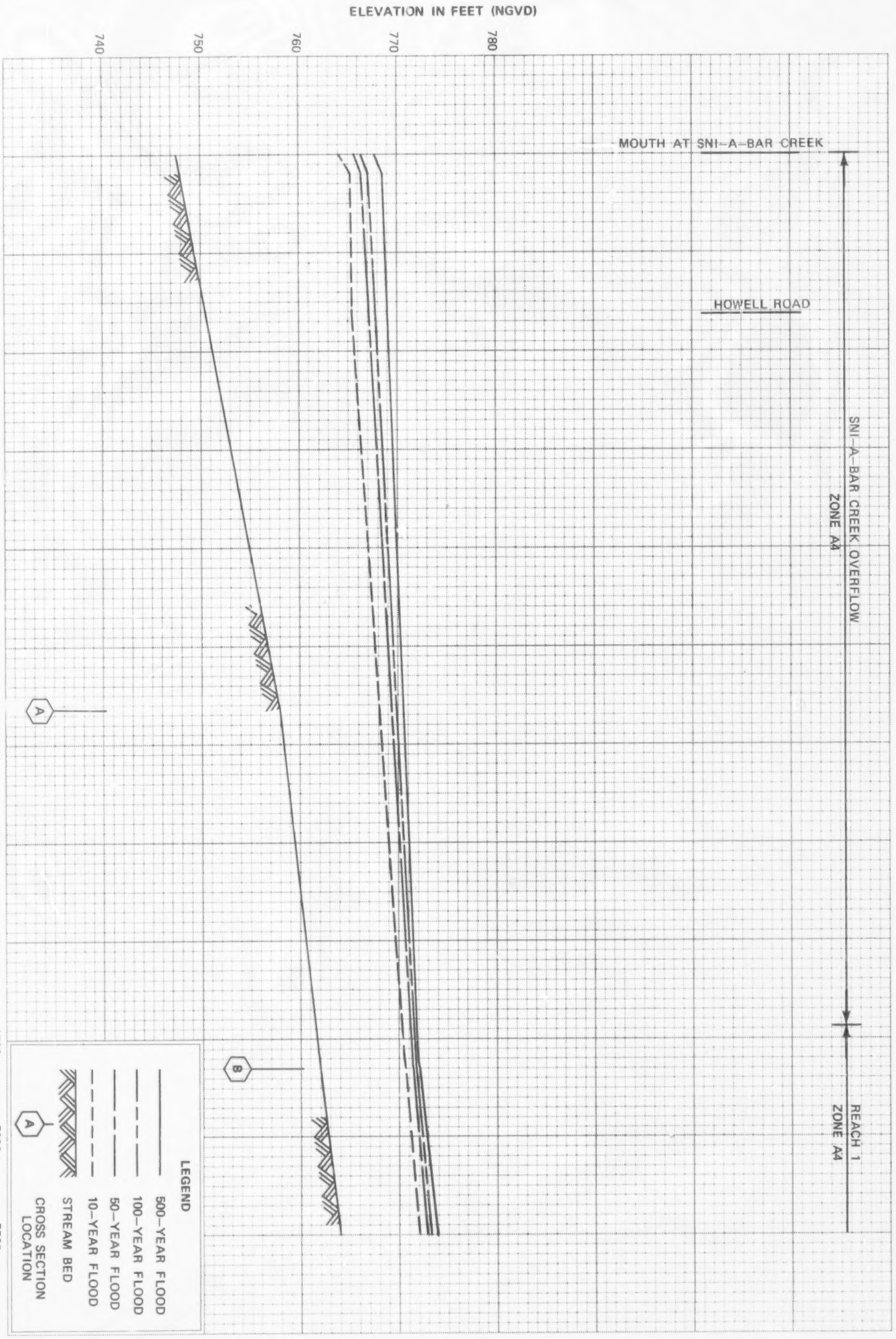
39P

BEST COPY AVAILABLE



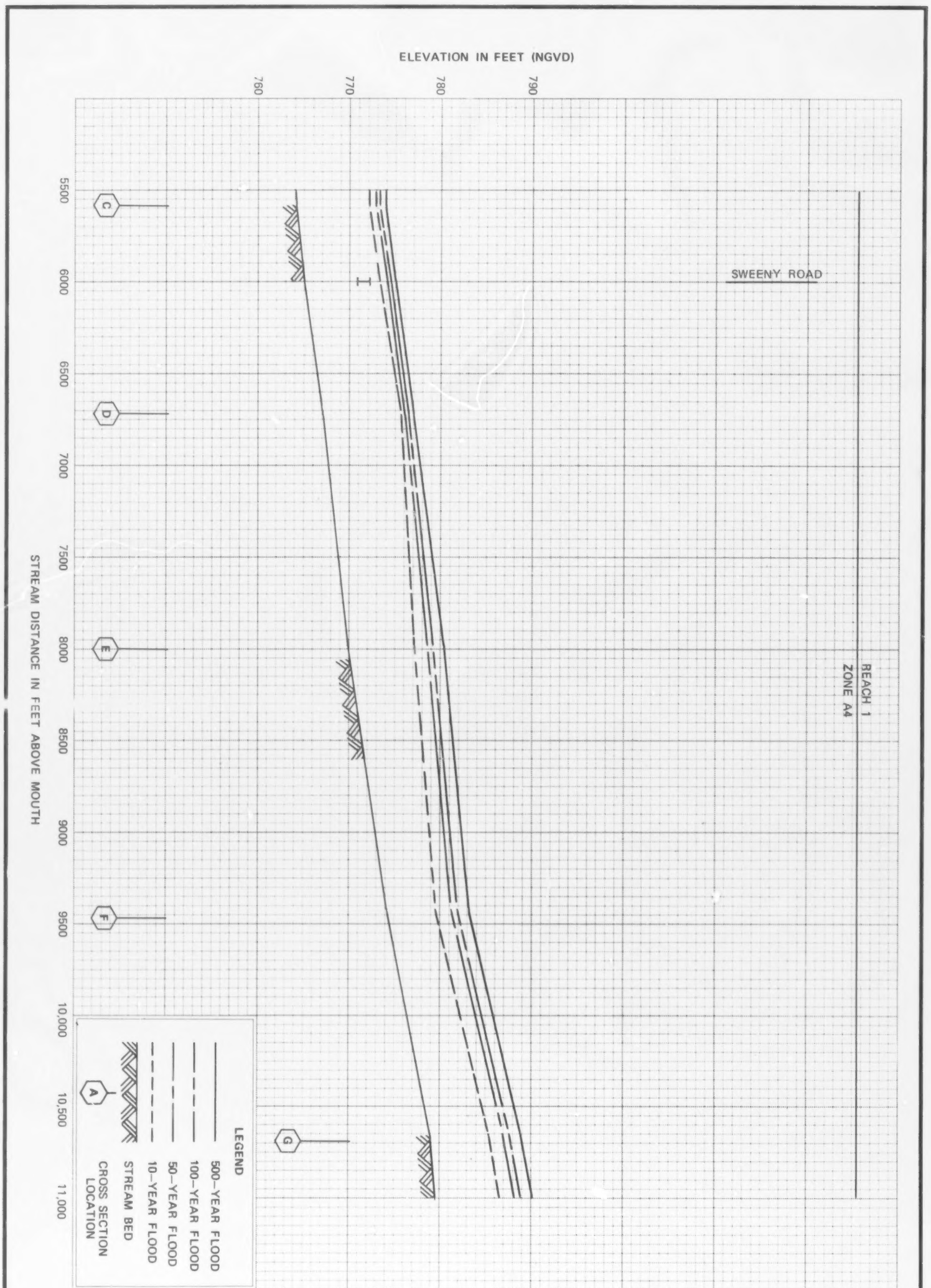
40P	FEDERAL EMERGENCY MANAGEMENT AGENCY **COUNTY OF JACKSON, MO** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **TRIBUTARY NO. S-3A**

BEST COPY AVAILABLE



41P	FEDERAL EMERGENCY MANAGEMENT AGENCY **COUNTY OF JACKSON, MO** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **TRIBUTARY NO. S-4**

BEST COPY AVAILABLE



FEDERAL EMERGENCY MANAGEMENT AGENCY

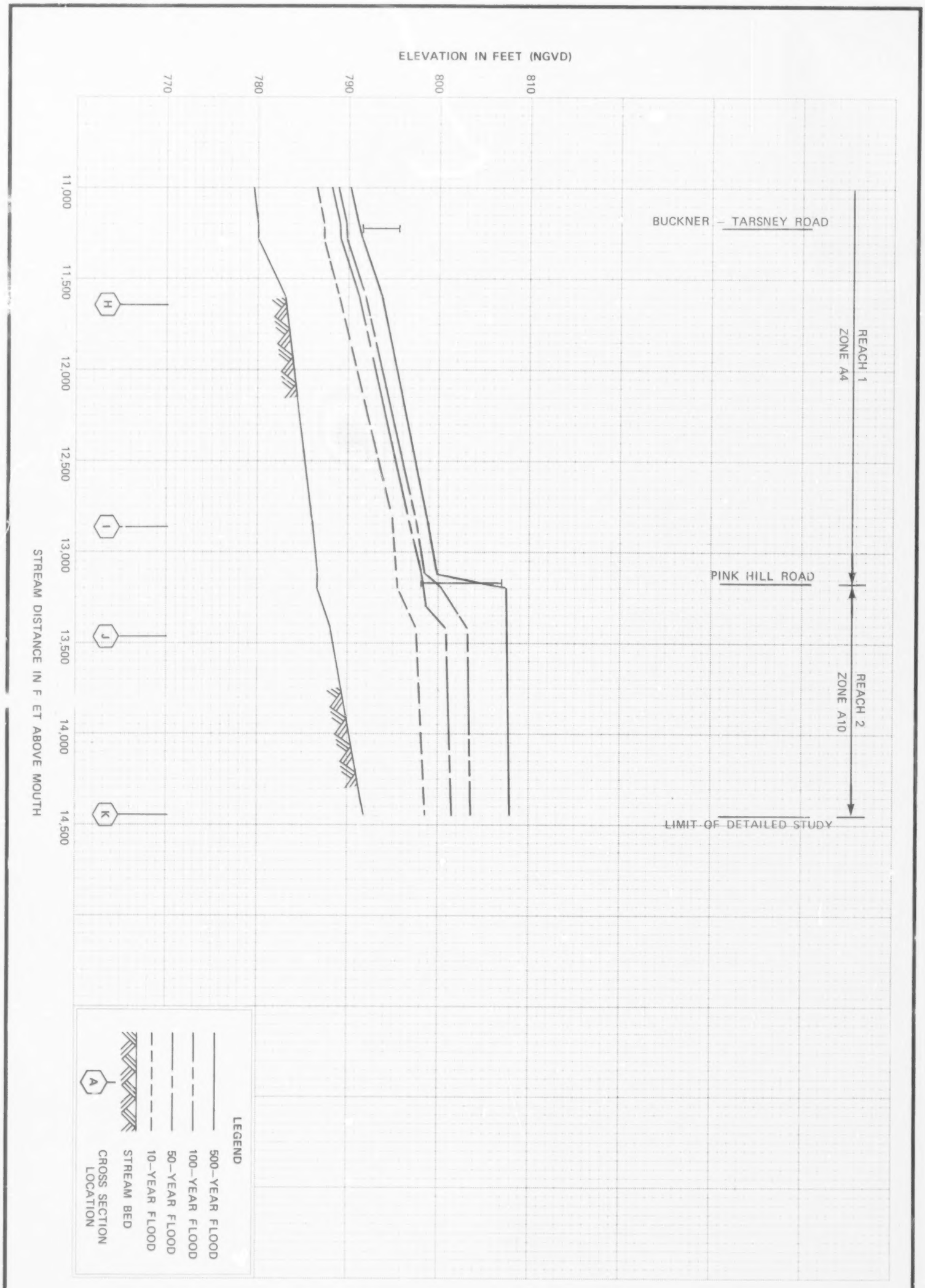
COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOOD PROFILES

TRIBUTARY NO. S-4

42P

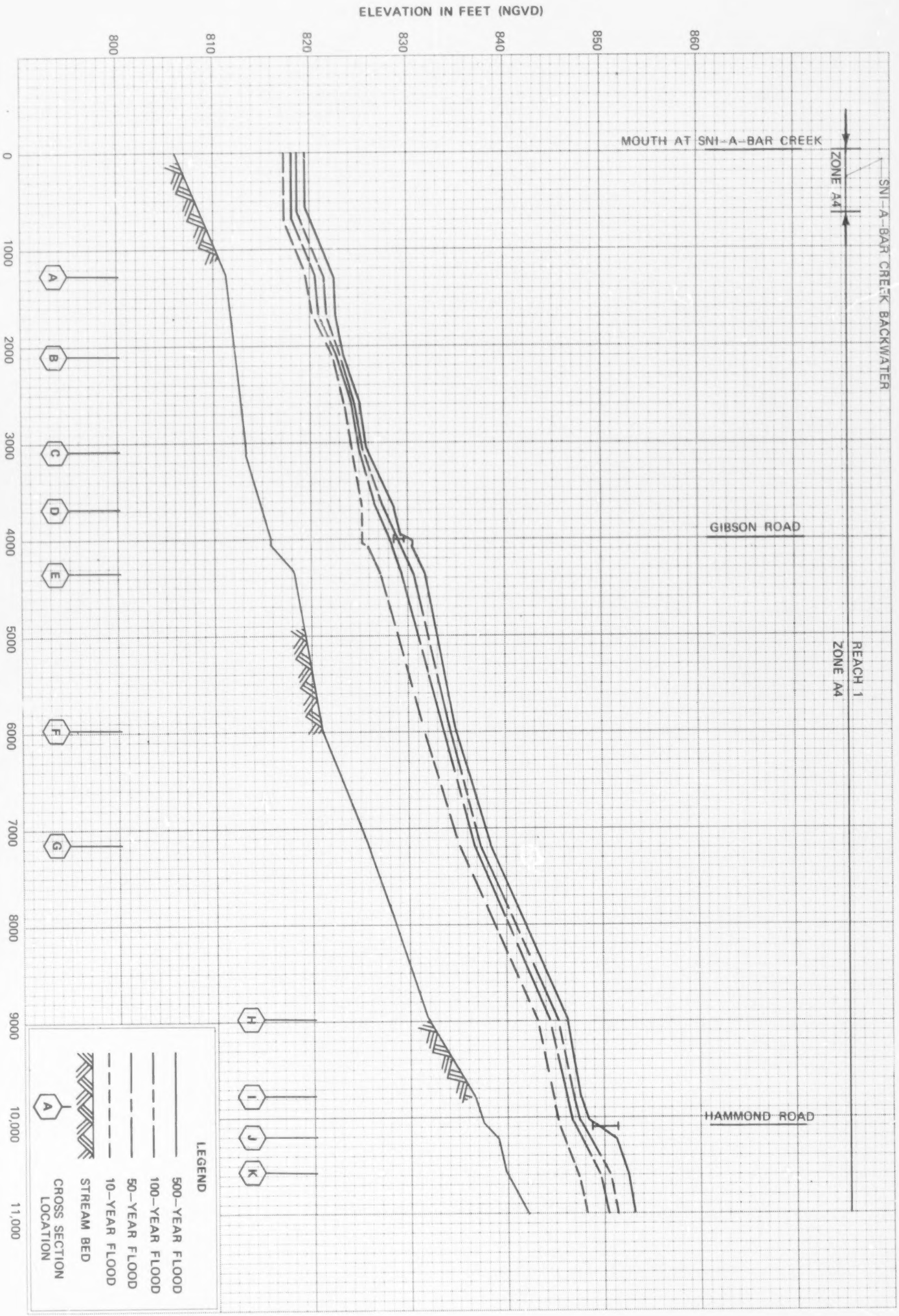
BEST COPY AVAILABLE



89

BEST COPY AVAILABLE

43P	FEDERAL EMERGENCY MANAGEMENT AGENCY COUNTY OF JACKSON, MO (UNINCORPORATED AREAS)	FLOOD PROFILES TRIBUTARY NO. S-4



FEDERAL EMERGENCY MANAGEMENT AGENCY

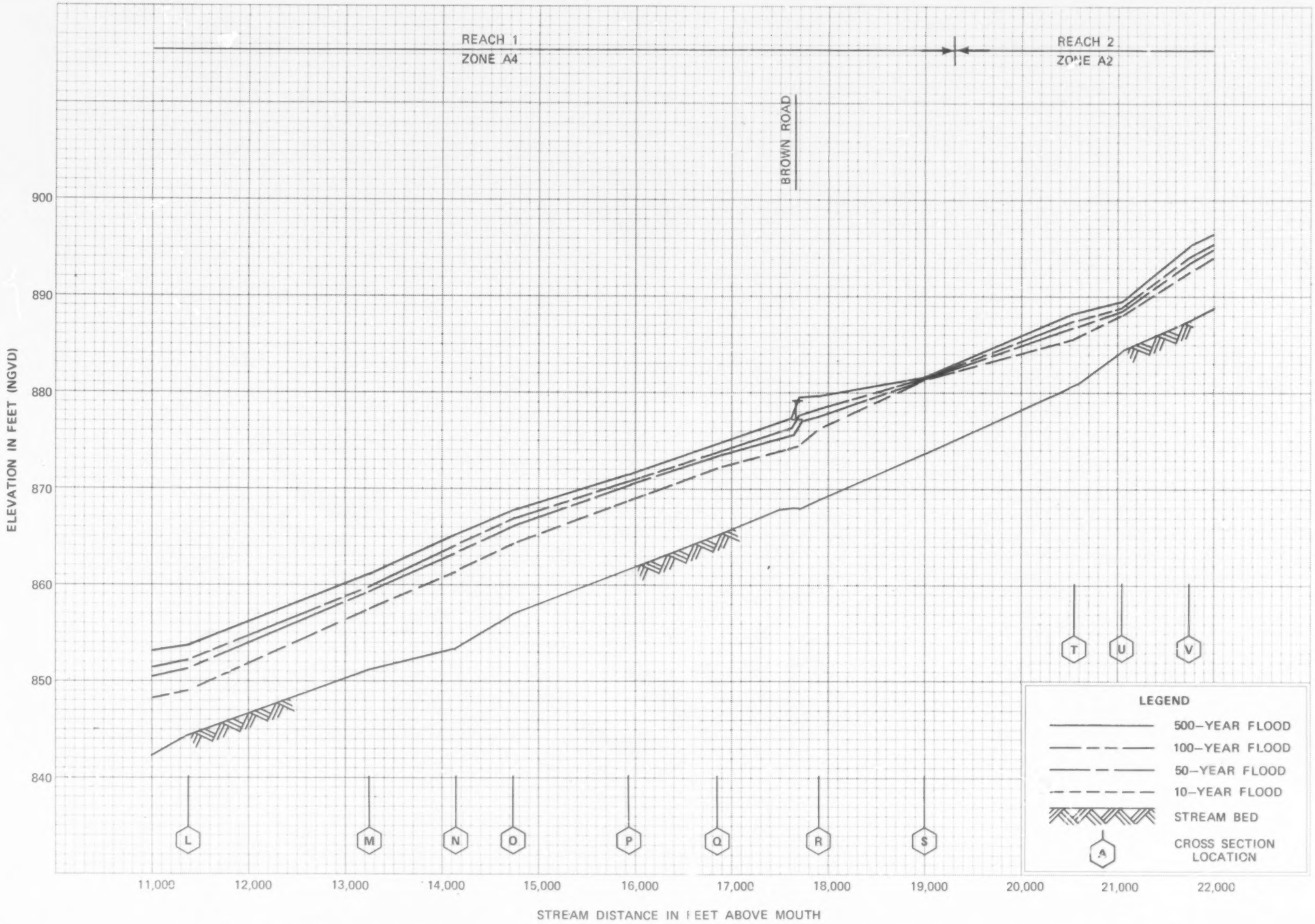
COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOOD PROFILES

TRIBUTARY NO. S-5

44P

BEST COPY AVAILABLE



FLOOD PROFILES

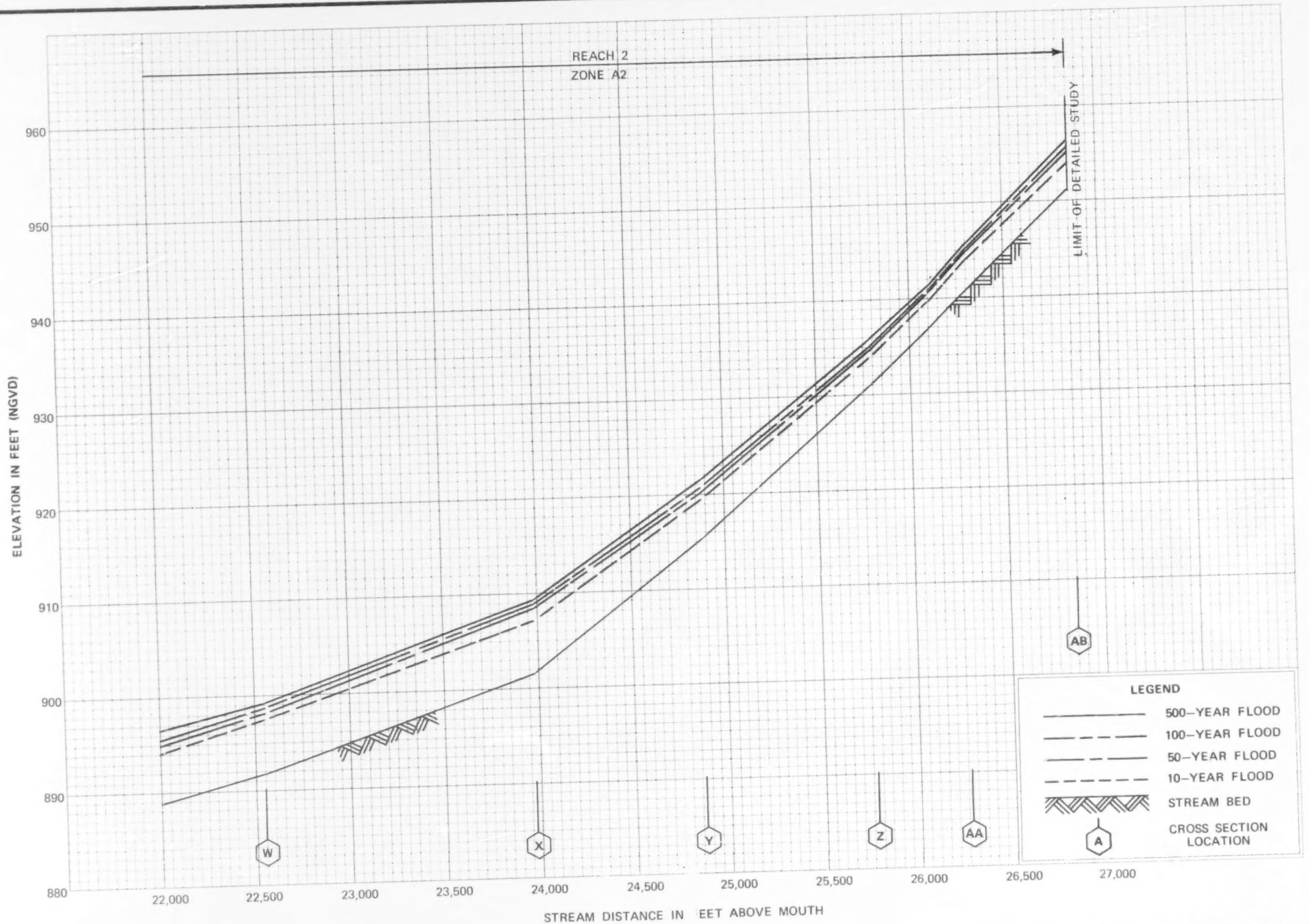
TRIBUTARY NO. S-5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

45P

BEST COPY AVAILABLE



FLOOD PROFILES

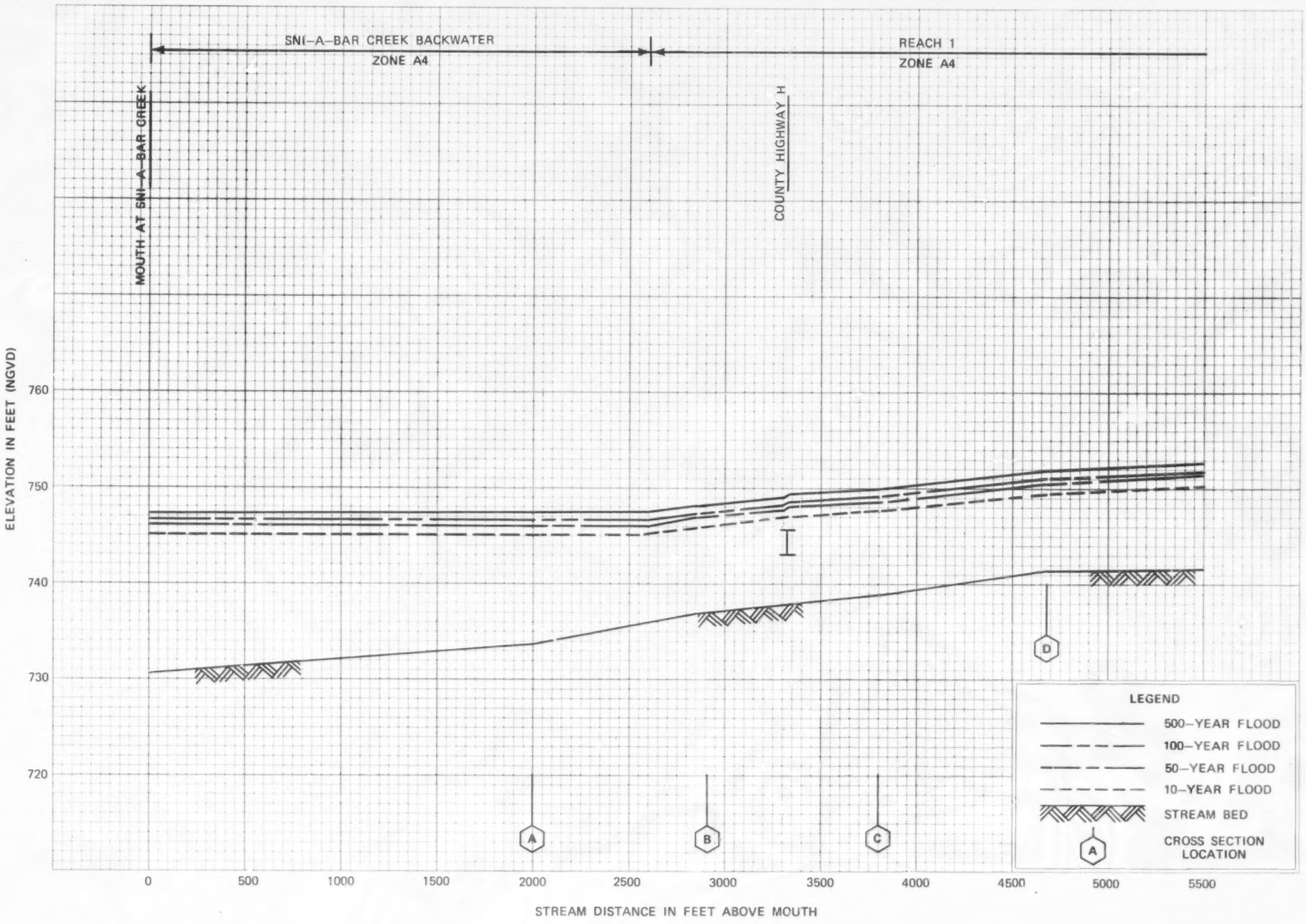
TRIBUTARY NO. S-5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

46P

BEST COPY AVAILABLE



FLOOD PROFILES

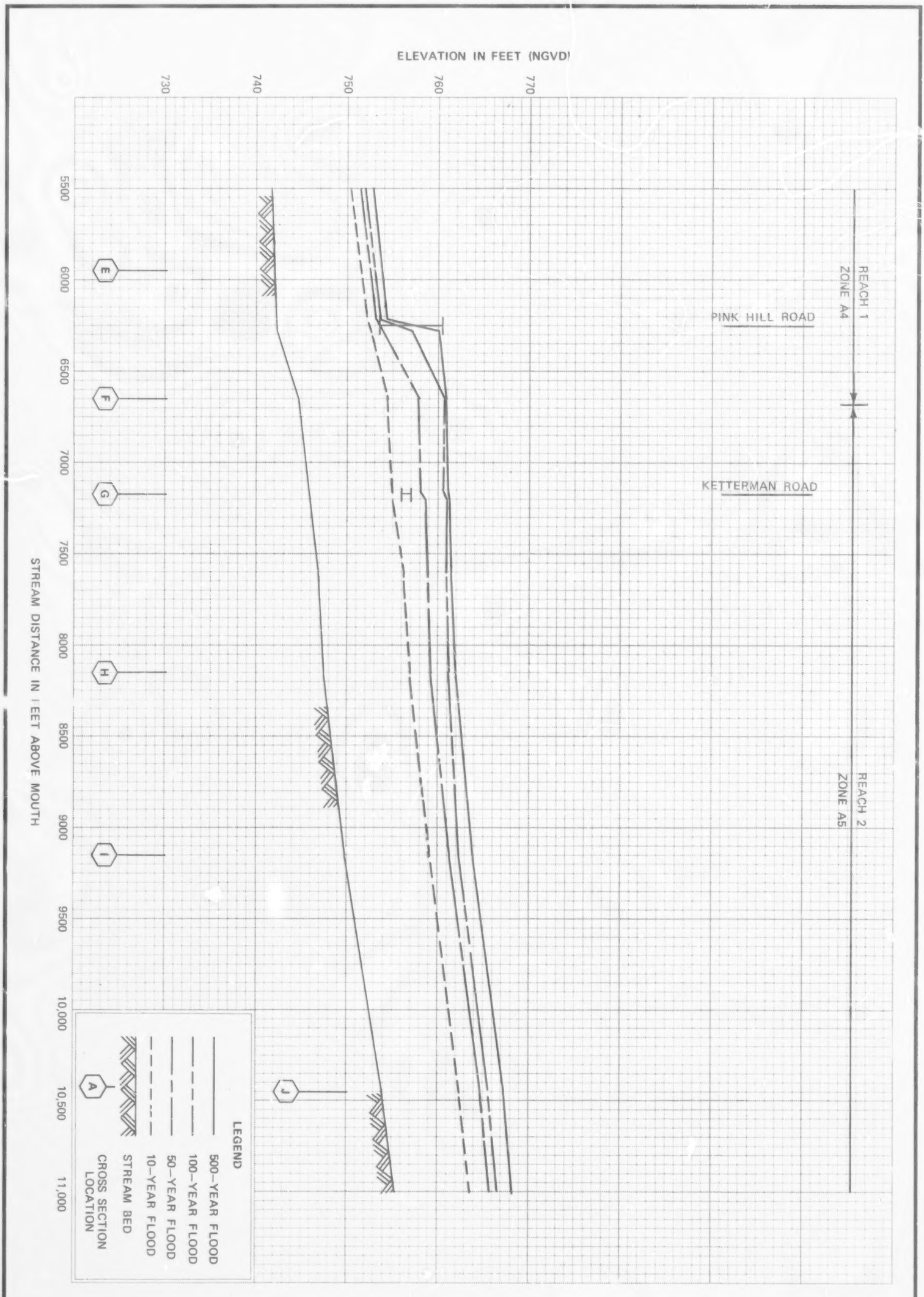
TUCKER BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

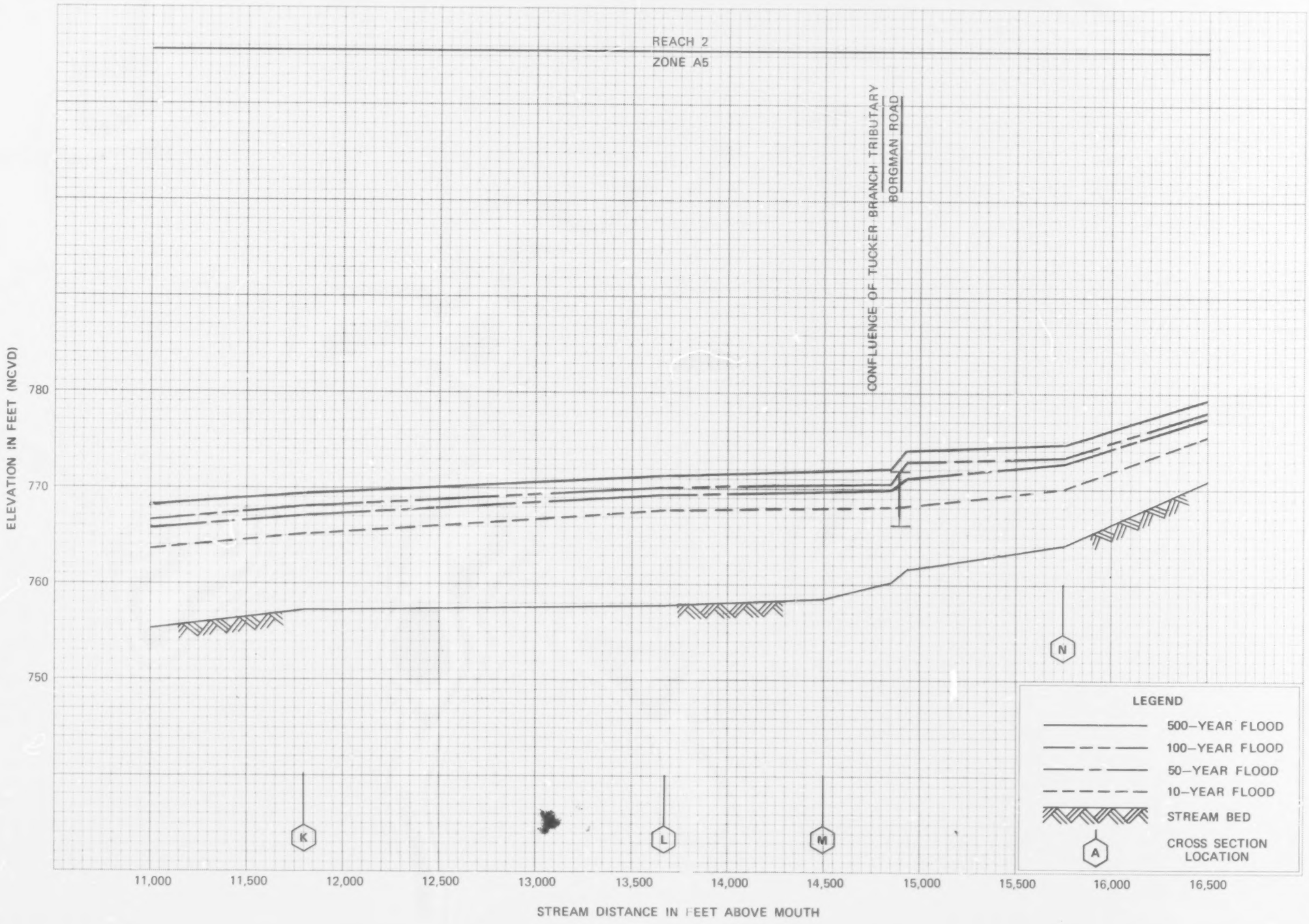
47P

BEST COPY AVAILABLE



48P	FEDERAL EMERGENCY MANAGEMENT AGENCY **COUNTY OF JACKSON, MO** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **TUCKER BRANCH**

BEST COPY AVAILABLE



FLOOD PROFILES

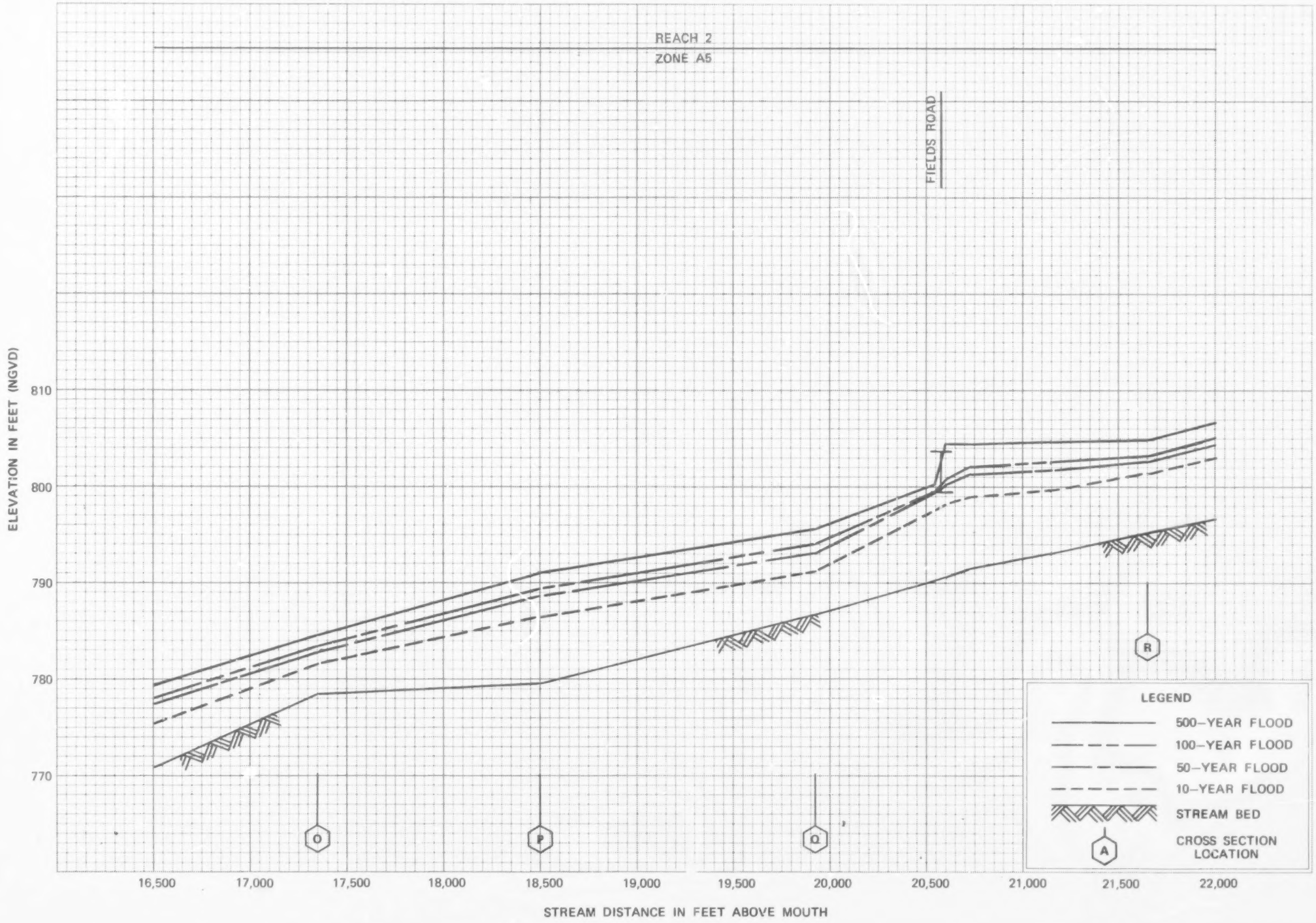
TUCKER BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

49P

BEST COPY AVAILABLE



FLOOD PROFILES

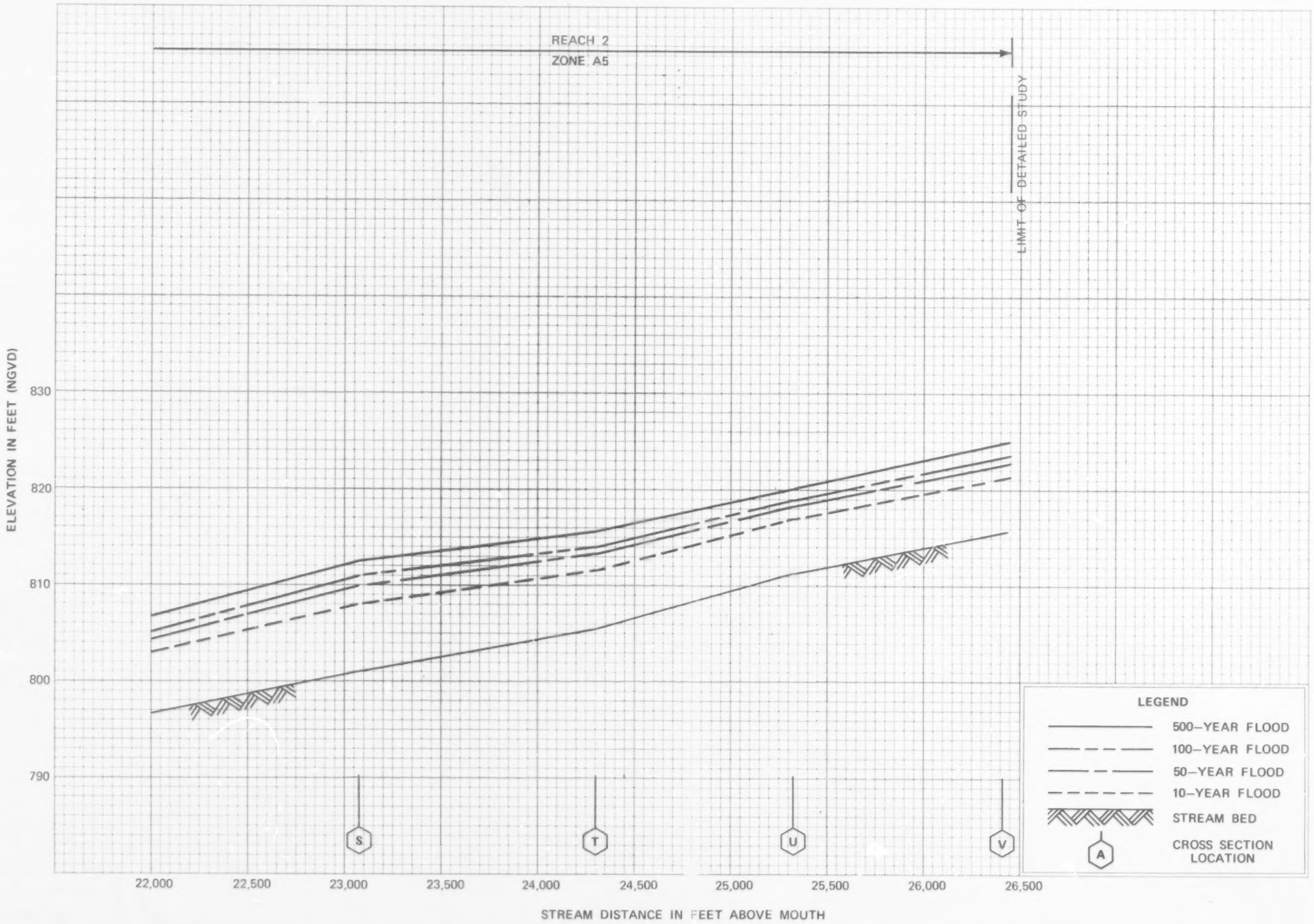
TUCKER BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

50P

BEST COPY AVAILABLE



FLOOD PROFILES

TUCKER BRANCH

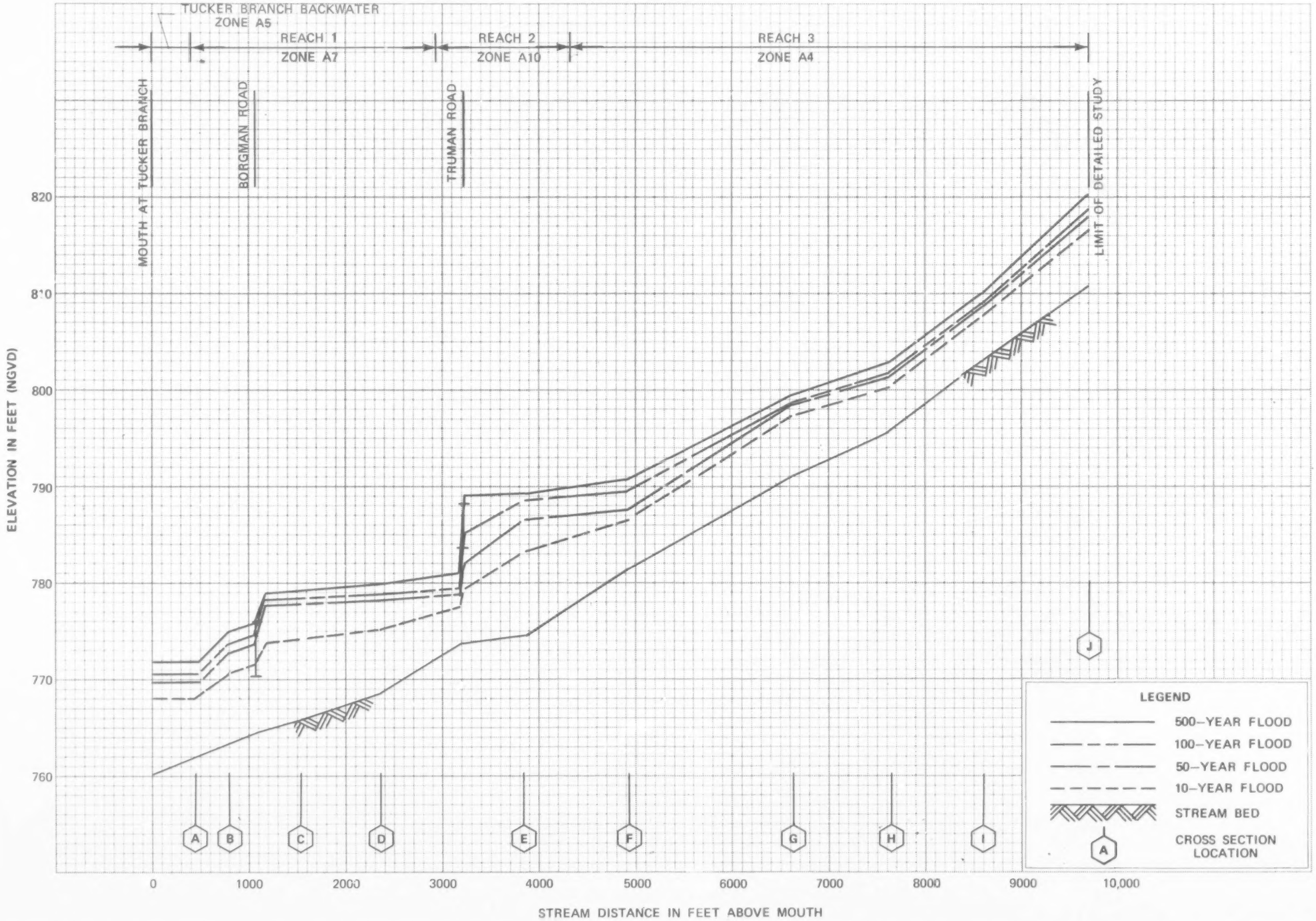
FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO

(UNINCORPORATED AREAS)

51P

BEST COPY AVAILABLE



FLOOD PROFILES

TUCKER BRANCH TRIBUTARY

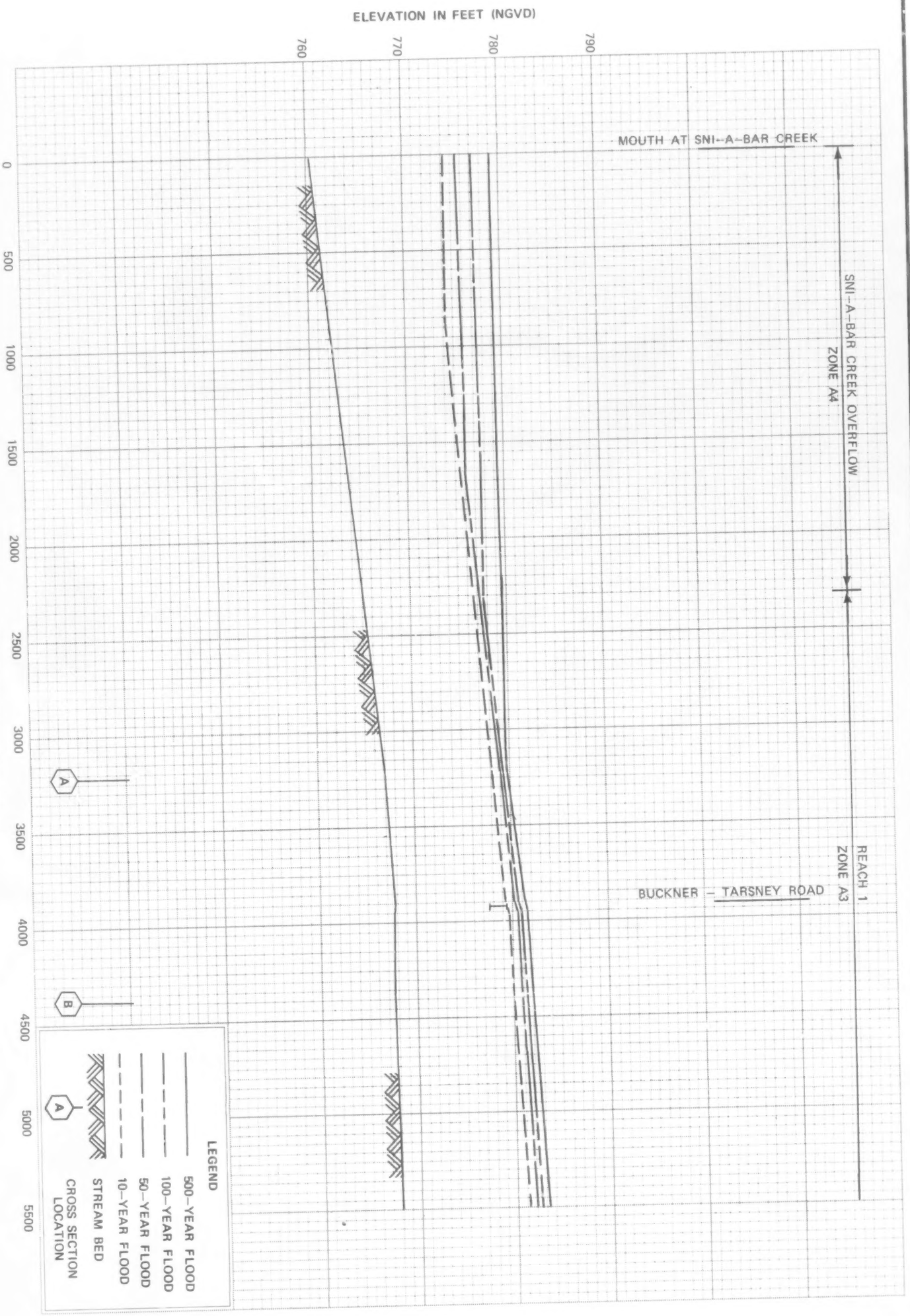
FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

52P

98

BEST COPY AVAILABLE



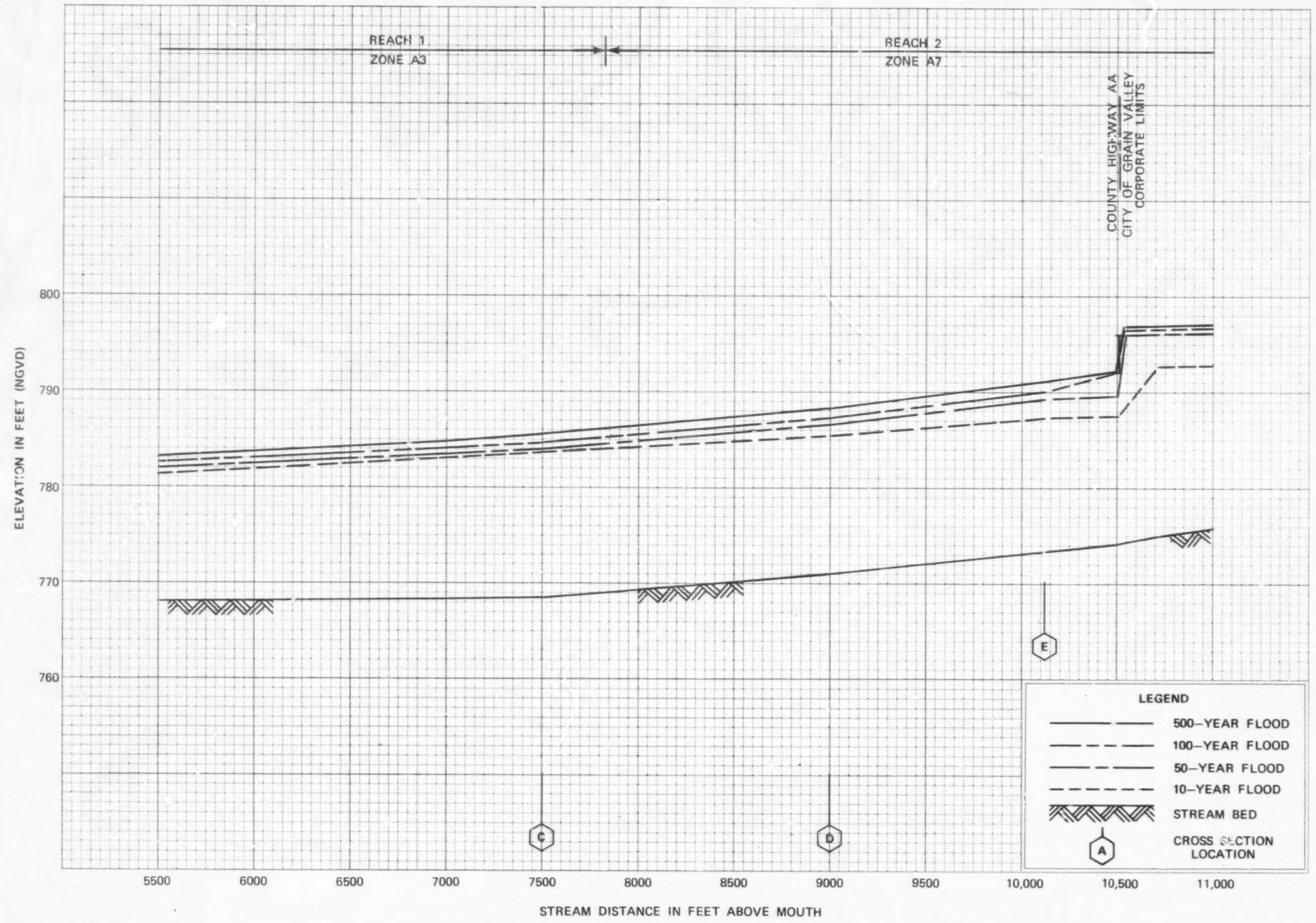
53P	FEDERAL EMERGENCY MANAGEMENT AGENCY **COUNTY OF JACKSON, MO** (UNINCORPORATED AREAS)	**FLOOD PROFILES** **BLUE BRANCH**

BEST COPY AVAILABLE

BLANK PAGE

BLANK PAGE

BLANK PAGE



FLOOD PROFILES

BLUE BRANCH

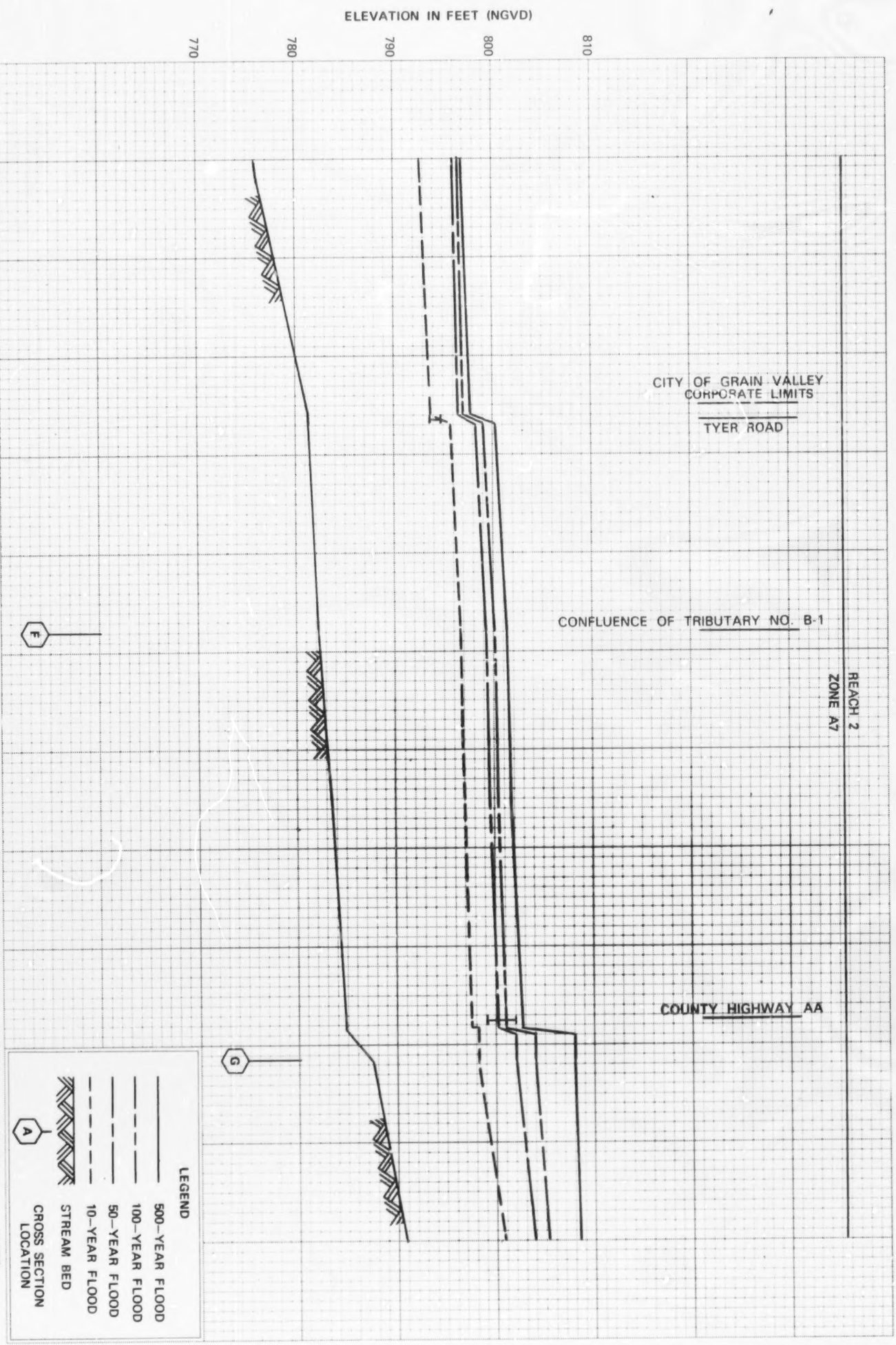
FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

54P

LOD

BEST COPY AVAILABLE



FEDERAL EMERGENCY MANAGEMENT AGENCY

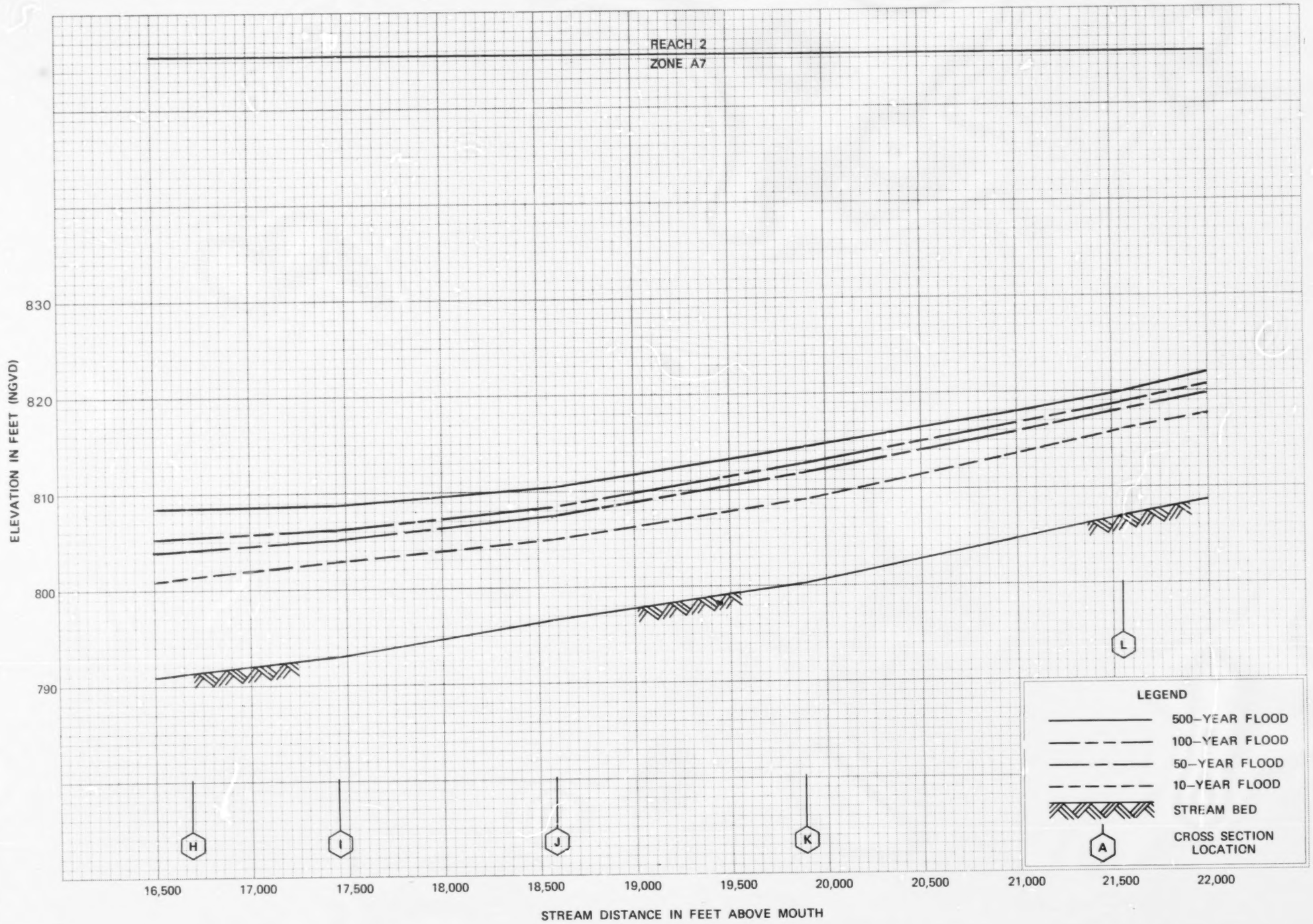
COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOOD PROFILES

BLUE BRANCH

55P

BEST COPY AVAILABLE



FLOOD PROFILES

BLUE BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO

(UNINCORPORATED AREAS)

56P

BEST COPY AVAILABLE

FLOOD PROFILES

BLUE BRANCH

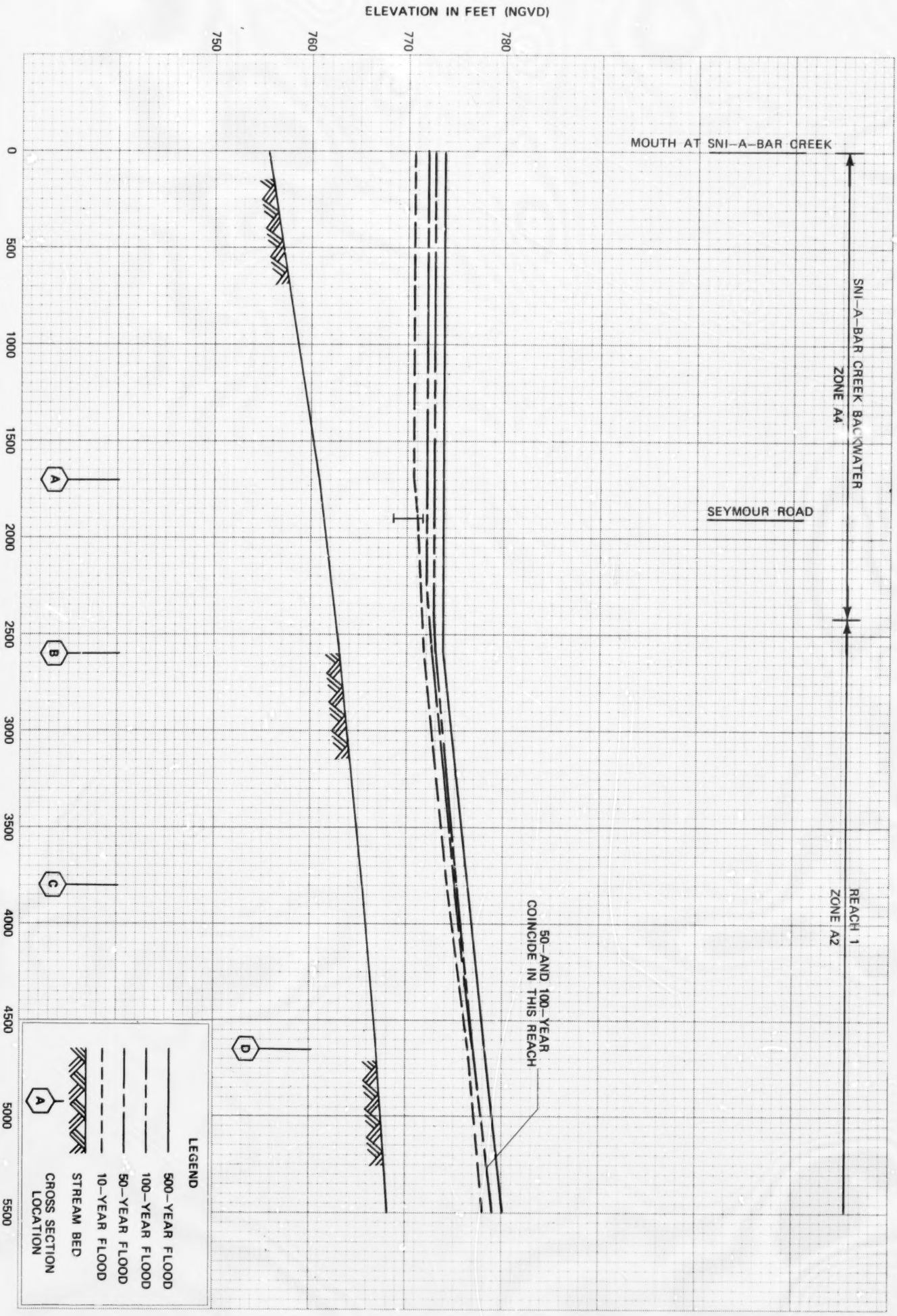
FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO

(UNINCORPORATED AREAS)

57P

BEST COPY AVAILABLE



FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

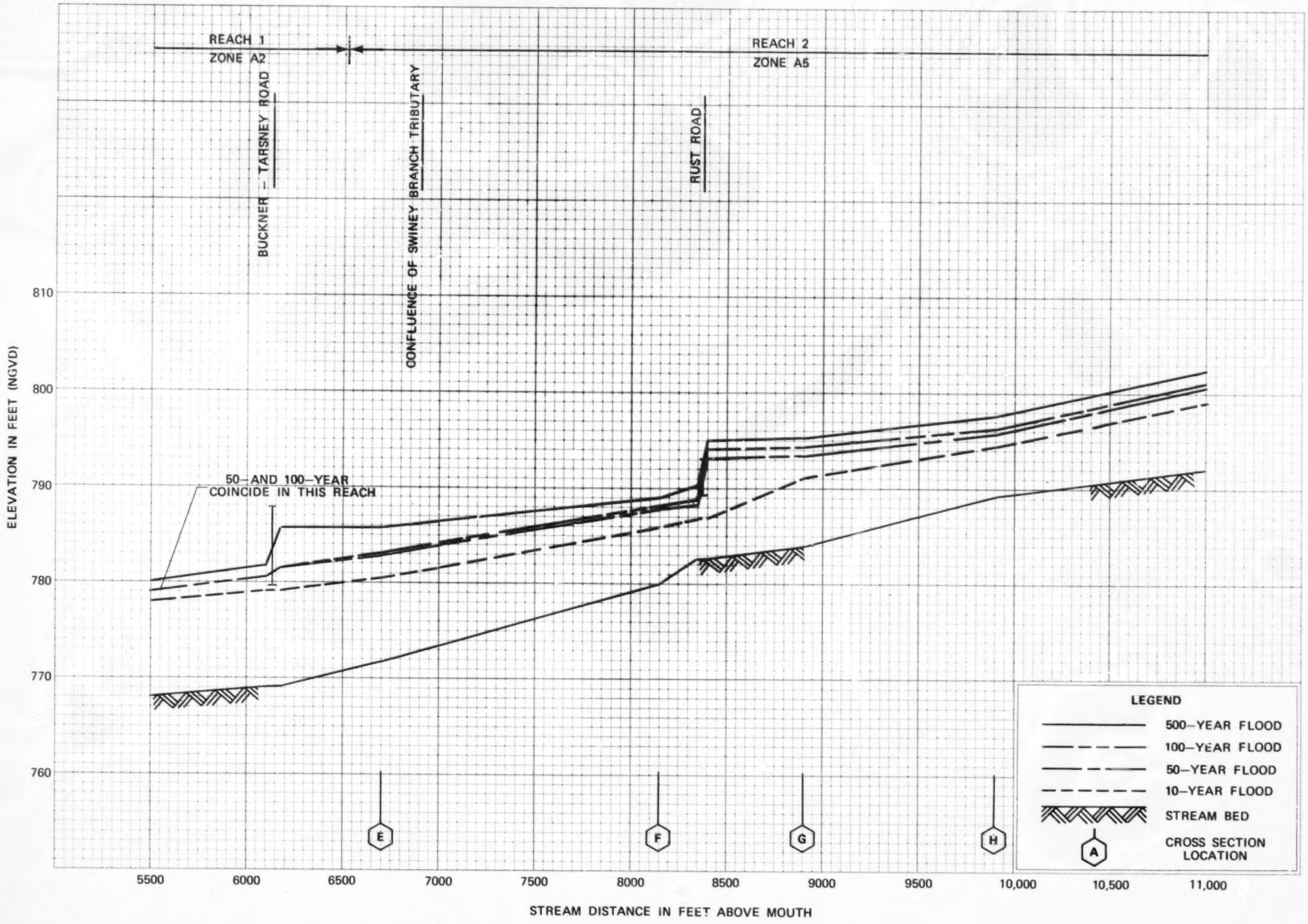
FLOOD PROFILES

SWINEY BRANCH

58P

104

BEST COPY AVAILABLE



FLOOD PROFILES

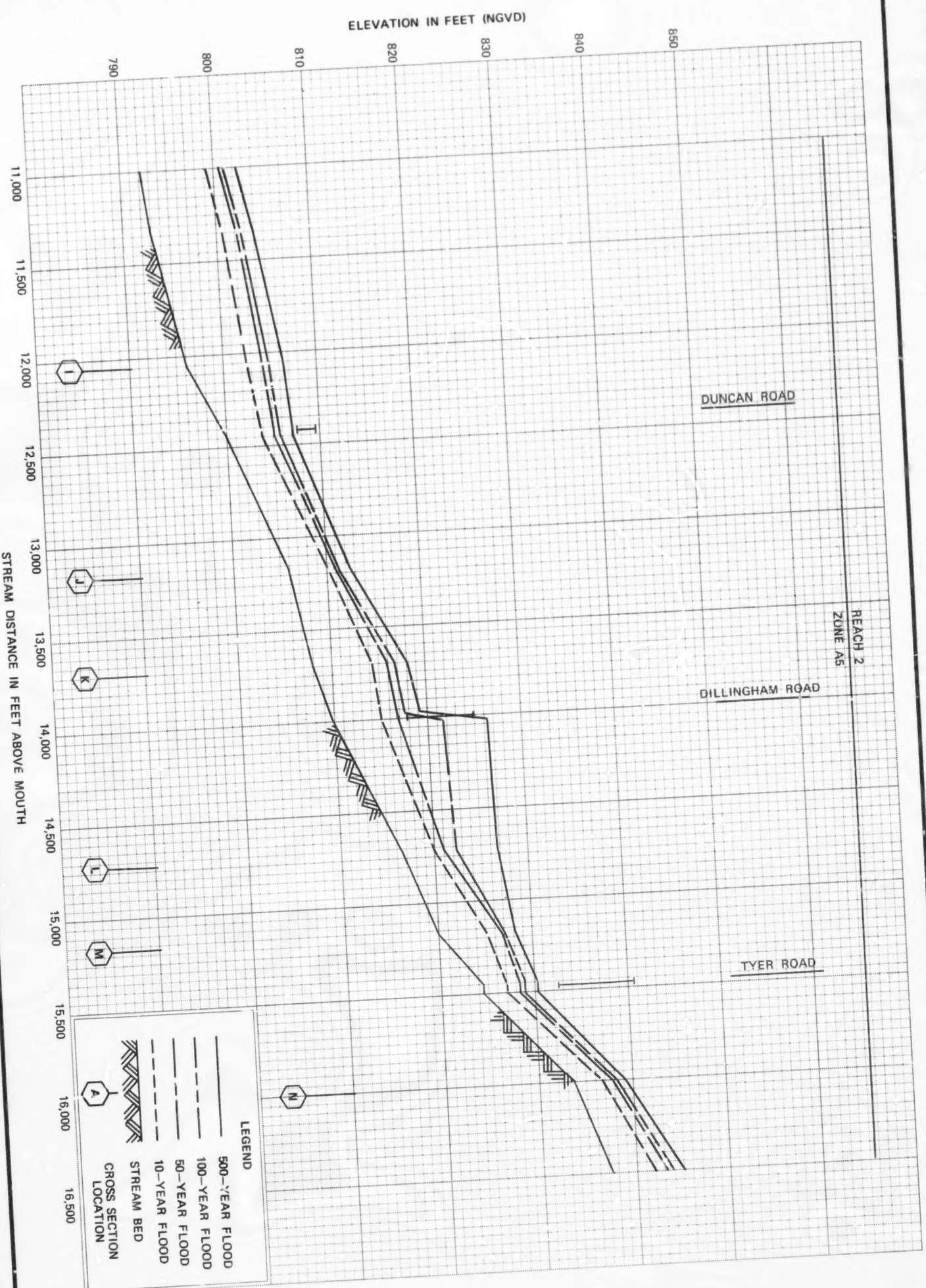
SWINEY BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

59P

BEST COPY AVAILABLE



FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

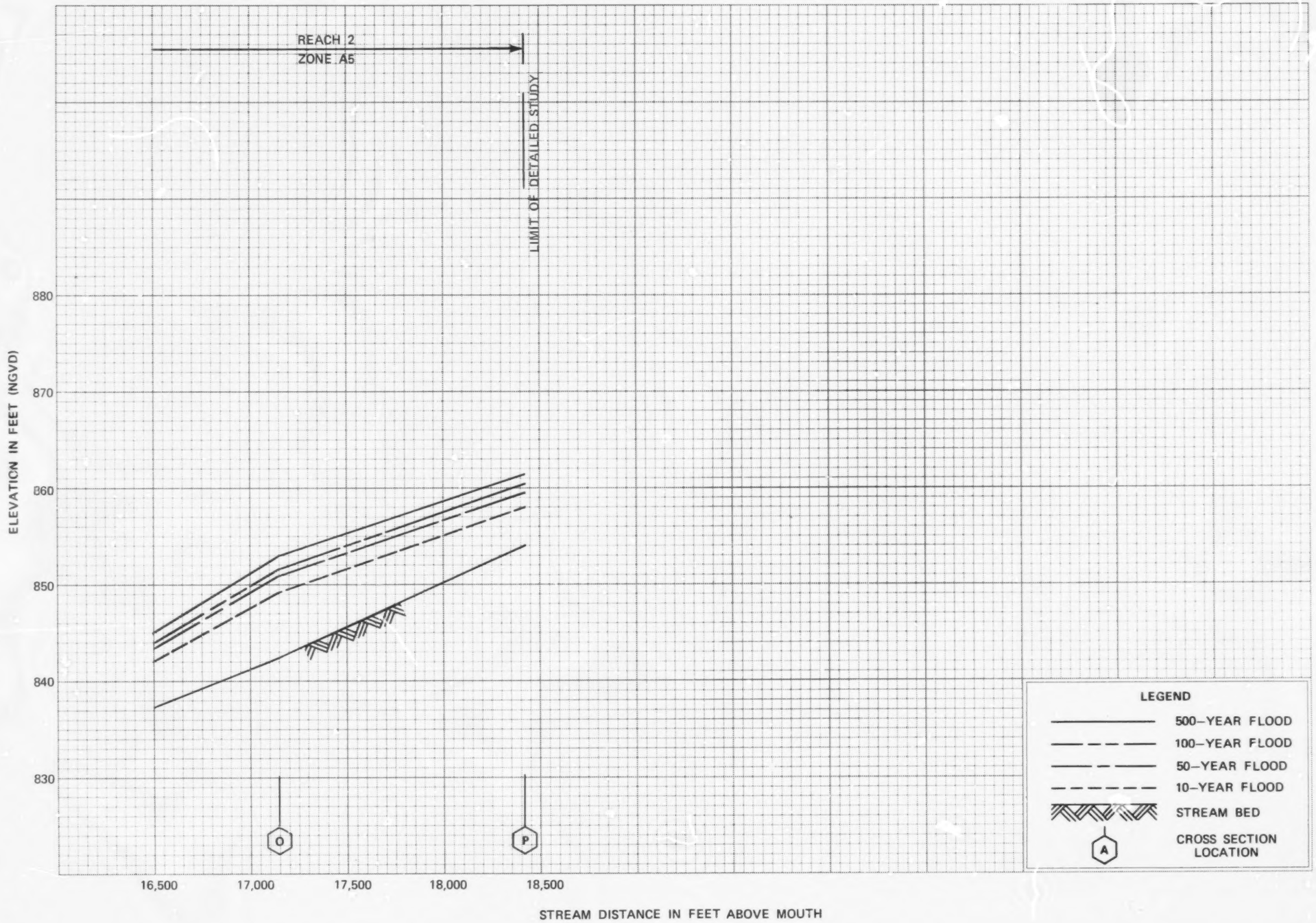
FLOOD PROFILES

SWINEY BRANCH

60P

606

BEST COPY AVAILABLE



FLOOD PROFILES

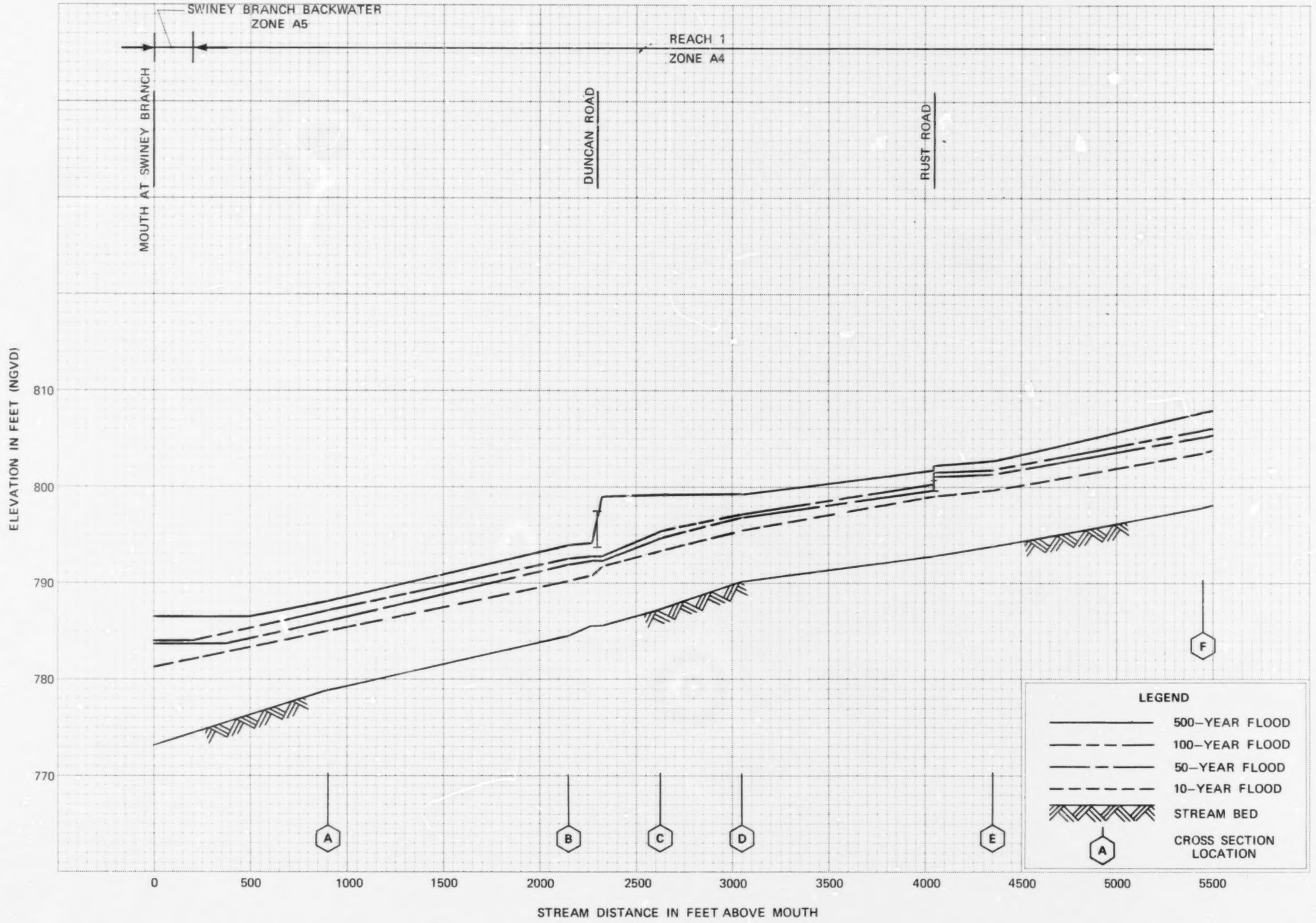
SWINEY BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

61P

BEST COPY AVAILABLE



FLOOD PROFILES

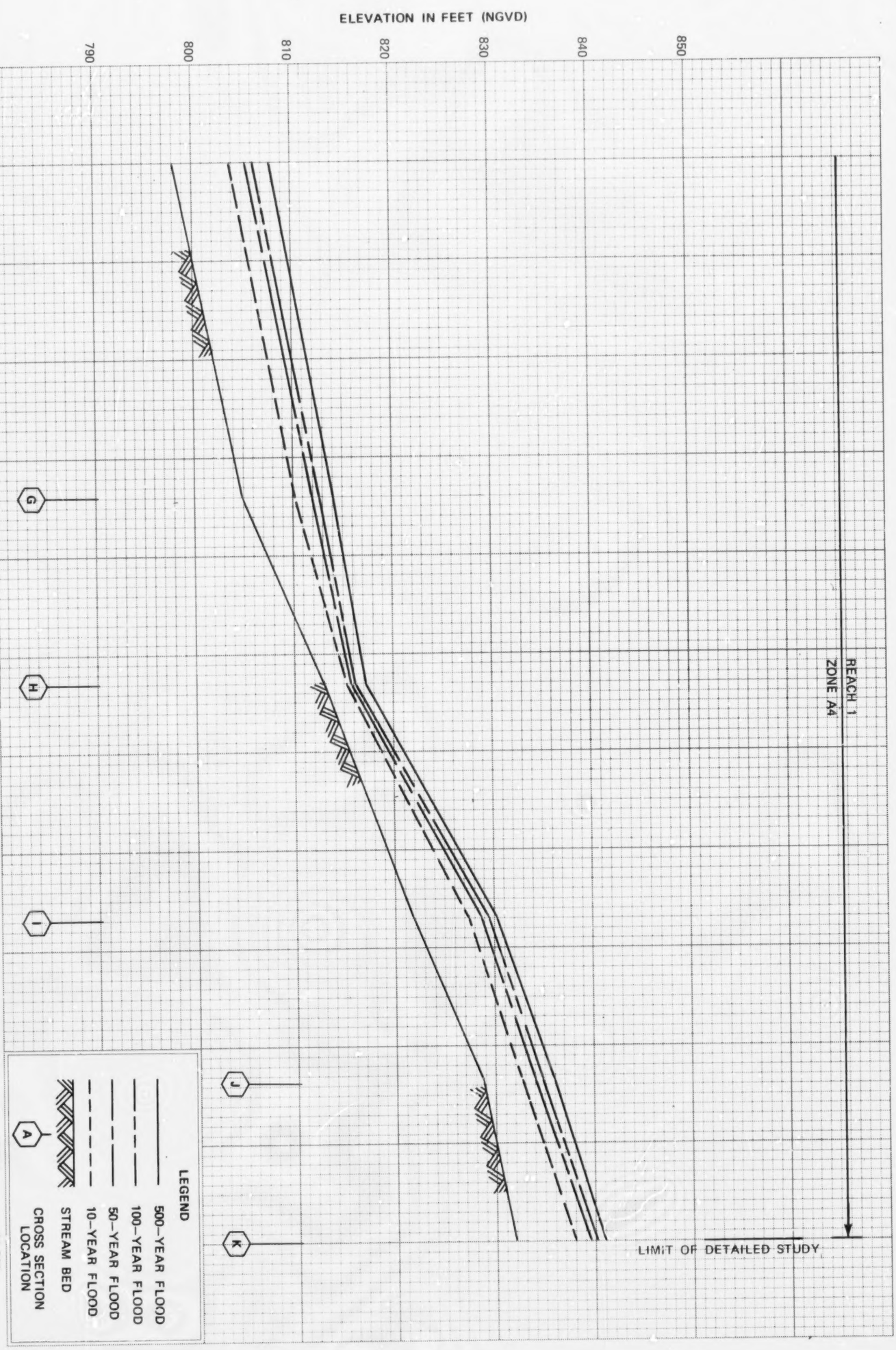
SWINEY BRANCH TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

62P

BEST COPY AVAILABLE



FEDERAL EMERGENCY MANAGEMENT AGENCY

COUNTY OF JACKSON, MO
(UNINCORPORATED AREAS)

FLOOD PROFILES

SWINEY BRANCH TRIBUTARY

63P

BEST COPY AVAILABLE